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ABSTRACT

This report is one of a series of disciplinary planning studies carried out by the Advisory Committee on Academic Planning of the Council of Ontario Universities. The emphasis of the report is on forward planning, and it is hoped that it will help ensure the more ordered growth and development of graduate studies in Ontario's Universities. This report deals with all aspects of geography except geomorphology. Recommendations include: (1) Field work in geography should be considered an essential part of graduate education and be adequately financed by the universities. (2) The universities increase the rate of completion of doctoral degrees for students in geography. (3) The universities strengthen graduate work in geography, avoid unnecessary duplication and make use of all the resources available in the province. (4) The universities give consideration to introducing a parttime master's program designed especially for the needs of parttime students. Appendices include: the report of the consultants; comments by universities; procedures of planning study and terms of reference; and the membership of discipline groups. (Author/PG)

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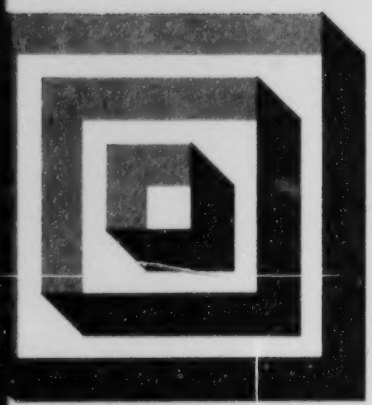
Perspectives and Plans for Graduate Studies



4 Geography 1973

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Advisory Committee on Academic Planning
Ontario Council on Graduate Studies

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Council of Ontario Universities
Conseil des Universités de l'Ontario

PERSPECTIVES AND PLANS

FOR GRADUATE STUDIES

4. GEOGRAPHY 1973*

Advisory Committee on Academic Planning
Ontario Council on Graduate Studies

74-4

* The status of this report is given in Item 2 of the statement of principles, on page 1.

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F O R E W O R D

The Advisory Committee on Academic Planning (ACAP), as presently constituted, was established by the Ontario Council on Graduate Studies at the request of the Council of Ontario Universities in January, 1971. The Advisory Committee's terms of reference were directed broadly toward the effective planning and rationalization of long-term graduate development in Ontario's universities both at the level of individual disciplines and at a more general level. The Advisory Committee's activities are based on the premise that graduate work is the one area of university activity in which specialization among universities, cooperative arrangements and comprehensive planning are most necessary.

In March, 1971, concern over the rising costs for support of graduate work prompted the Ontario government to institute a general embargo on funding for any new graduate programme, that is, one which had no students enrolled on May 1, 1971. This embargo was subsequently modified to include only those disciplines in which over-expansion was felt to be potentially most serious. ACAP was to begin immediately planning studies in those disciplines which remained embargoed.

The disciplinary planning process begins with the formation of a discipline group composed of one representative from each university with an interest in graduate work in the planning area. The discipline group assists in defining the precise academic boundaries of each study, scrutinizes the data collection forms, prepares a list of potential consultants, maintains contact with the consultants during the study, and prepares a commentary on the consultants' report.

The final decision on consultants for the planning study is made by ACAP. The consultants are requested to make recommendations on programmes to be offered in Ontario, desirable and/or likely enrolments, the division of responsibility for programmes among universities, and the desirable extent of collaboration with related disciplines.

While the consultants' report is the single largest element in the final report on the planning study, ACAP considers the statement of each university's forward plans to be most significant. These forward plans are usually outlined prior to the planning study, and are used as a basis for comments from the universities concerned on the consultants' report.

On receipt of the consultants' report, and comments on it from the discipline group and the universities, ACAP begins work on its own recommendations for submission directly to the Council of Ontario Universities. COU considers the input from all sources, and prepares the position of the Ontario university community.

The following report is one of a series of disciplinary planning studies carried out by the Advisory Committee on Academic Planning and to be published by the Council of Ontario Universities. The emphasis of the report is on forward planning, and it is hoped that the implementation of COU's recommendations will help to ensure the more ordered growth and development of graduate studies in Ontario's universities.

* * * * *

Council of Ontario Universities
Conseil des Universités de l'Ontario

Report and Recommendations concerning Graduate Studies in Geography

On the instruction of the Council of Ontario Universities, the Advisory Committee on Academic Planning has conducted a planning assessment for geography. The resultant report from ACAP is attached together with the consultants' report, the comments by the discipline group, and the comments of the individual universities. The procedures followed and the planning techniques used are described in the ACAP report and are not repeated here. It is important for the reader to read the ACAP report and attachments in order to understand the recommendations in this Report from COU.

This report deals with all aspects of geography except geomorphology, which is studied in the report on the Solid Earth Sciences. Some of the findings of the assessment in Planning and Environmental Studies will also be of interest to geography departments.

The Council received the ACAP report and supporting documentation on May 4, 1973. The contents of the document were debated on that date, on June 1 and on October 16, 1973. As a result of these discussions this Report and Recommendations were prepared and approved by the Council on December 3, 1973. The Report is addressed to the Committee on University Affairs and the universities of Ontario.

The following principles have been adopted and will apply to this and all other COU Reports arising out of assessments.

1. Discipline assessments by ACAP should form the basis for planning by the universities of their development of graduate studies, particularly PhD programmes. On the basis of these assessments, COU should make its own recommendations on currently embargoed programmes. Each university must retain the freedom and responsibility to plan and implement its own academic development. However, the universities in embarking on a cooperative planning process have signalled their intentions of cooperating with the COU recommendations.

2. Universities generally plan their emphases in graduate study on the bases of related departments, not of single departments. Initially the sequential nature of the discipline planning assessments makes this difficult. However, by the summer of 1974 there will have been assessments of most of the social sciences, all of the physical sciences, engineering doctoral work, and a number of professional areas. On the information and recommendations then available, each university should be able to make decisions concerning its support of graduate programmes in these areas. Amendments to university responses to the individual discipline planning assessments may then be made in the wider context of a group of related disciplines and amendments to COU's original Reports on an individual discipline may be required.

3. The first concern in planning is to review the quality of graduate opportunities and of students in Ontario universities and to make judgements about how to proceed or not proceed based on quality considerations. The procedures have made use of highly qualified independent consultants who have no direct interest in the universities in Ontario. Accordingly, COU feels bound to accept their judgements about quality where they are stated clearly unless unconvinced that their conclusions about quality are consistent with their evidence. COU's recommendations in the case of programmes which are of unsatisfactory or questionable quality will call for discontinuation or the carrying out of an appraisal, if the continuation of the programme is not crucial to the province's offerings. In some cases, however, there may be a particular need for the programme and the appropriate recommendation will be to strengthen it, with an appraisal following that action. It is also possible that if there were found to be too large a number of broadly-based programmes there could be a recommendation to discontinue the weakest; in this case, an appraisal for a more limited programme might be relevant.

4. A second consideration is the scope of opportunities for graduate work in the discipline. Do the Ontario programmes together offer a satisfactory coverage of the main divisions of the discipline?

5. Numbers of students to be planned for will depend on the likely number of applicants of high quality and in some cases may relate to an estimate of society's needs. Such estimates may be reasonably reliable in some cases and not in others. If the plans of the universities appear to be consistent with the likely number of well-qualified applicants and there is either no satisfactory basis for estimating needs or there is no inconsistency between a reasonable estimate of need and the universities' plans, then COU will take note of the facts without making recommendations on the subject of numbers.

   If the numbers being planned for by the universities are grossly out of line with the anticipated total of well-qualified students, or a reliable estimate of needs, COU will make appropriate corrective recommendations. Depending on the circumstances, these may call for a change in the total numbers to be planned for and indications of which institutions should increase, decrease, or discontinue. The recommendations in serious cases may need to specify departmental figures for each university for a time. If the numbers being planned for are insufficient, the recommendations may call for expansion, or new programmes, and may have implications for both operating and capital costs.

   Unless there are exceptional circumstances, the recommendations concerning enrolment will not call for a university to refuse admission to any well-qualified student who wishes to work in a field in which that university offers a programme and in which it has the capacity to accommodate the student.

cont...

6. The quality of graduate programmes is partly dependent on size, and for each programme, depending on how it is designed and its scope, there is a minimum size of enrolment below which quality may suffer. That number cannot be expressed for the discipline as a whole but only for individual programmes depending on their purpose, their resources and their design.

7. Universities will be expected to notify COU if they intend to depart from the COU Report in any way which they believe might have a significant bearing on the provincial plans.

8. Appraisals arising as the result of assessments are to be based on the standards but not necessarily the scope of the acceptable programmes in the province.

General observations concerning geography

1. There are at present in the province two general doctoral programmes both with international recognition. There are also four of a smaller, more specialized nature. Two new specialized programmes at Queen's and York should be added to this list. The master's programmes vary in breadth of fields covered.

2. The graduate programmes in Ontario cover adequately the major fields of geography which are dealt with in this planning study, but the province should strengthen its offerings in biogeography, cartography and remote sensing.

3. Some excellent inter-university programmes now exist and there are significant opportunities for universities to cooperate further to make the best use of resources.

4. The slow rate of completion of degrees by geography doctoral students represents a problem in the Ontario system and steps should be taken by the universities to improve this situation.

5. Financial support for students in this discipline, as in all others, should be portable and sufficient to allow a student to choose a department for its academic suitability, not its financial support.

6. The universities' enrolment plans at both doctoral and master's level, as revised during the assessment are consistent with the likely numbers of well-qualified applicants and the consultants' estimate of need.

Recommendations

It is recommended that:

1. The Geography Discipline Group a) comment on the Planning and Environmental Studies Planning Assessment and/or the Solid Earth Sciences Planning Assessment, b) advise ACAP on the distribution of specialties at the master's level, particularly the neglected fields, c) annually review admissions standards, employment opportunities and enrolments with a view to recommending to ACAP modifications of any aspects of the plan.

2. Both the discipline group and the universities consider means to make use of the talents of suitable professors whose own institutions may not offer graduate work appropriate to their specialties.

3. The universities increase the rate of completion of doctoral degrees to about one degree per year for each five students enrolled.

4. Field work in geography be considered an essential part of graduate education and be adequately financed by the universities.

cont...

5. The universities give consideration to introducing a part-time master's programme designed especially for the needs of part-time students.

6. The universities, through cooperative arrangements, strengthen graduate work in geography, avoid unnecessary duplication and make use of all the resources available in the province.

7. If doctoral enrolment drops much below the expected number of about 120, a review be undertaken by ACAP and the discipline group to determine how best to maintain doctoral work of high quality.

8. Each university offering master's degrees select appropriate specialties consistent with the consultants' advice.

9. Brock University proceed with its plan to offer master's level work in geography, when it is ready.

10. Carleton University proceed with its plan to double its 1972-73 enrolment at the master's level by 1975-76.

11. The University of Ottawa continue to offer PhD and MA programmes in resource analysis and urban-economic geography and proceed with its plan for some growth in enrolment.

12. Carleton and Ottawa explore together the provision for the Ottawa area of master's work in cartography and remote sensing.

13. The University of Guelph proceed with its plan to continue doctoral work in agrometeorology and master's programmes with a total enrolment somewhat greater than its current level.

14. McMaster University proceed with its plan for roughly constant enrolments in its general programmes at both the master's and doctoral levels.

15. The University of Toronto proceed with its plan for roughly constant enrolment in its general doctoral programme with increased enrolment in its master's programme.

16. At the doctoral level, McMaster proceed with its plan to give primary emphasis to climatology and urban-economic geography and also to offer the cultural-historical field; and that the University of Toronto continue to cover all the specialty fields but offer work in climatology only in cooperation with McMaster and Guelph.

17. Queen's University proceed with its plan for a new PhD programme in urban-economic and cultural-historical geography, and with its plan to maintain roughly constant master's enrolment.

cont...

18. The University of Waterloo proceed with its plan for roughly constant enrolment in its doctoral and master's programmes and its plan to continue doctoral work in resource analysis, urban-economic geography and cartography and remote sensing, with primary emphasis on resource analysis.

19. The University of Western Ontario proceed with its plan to substantially decrease the enrolment in its doctoral programme from its 1972 level, maintaining primary emphasis in resource analysis and with urban-economic geography as a secondary field of emphasis, and its plan to maintain the master's enrolment at about its present level.

20. The University of Windsor proceed with its plan for roughly constant enrolment in its master's programme.

21. York University proceed with its new doctoral programme with primary emphasis on cultural-historical geography and with urban-economic geography and resource analysis as secondary fields for doctoral research and with its plan for roughly constant enrolment in its master's programme.

22. Wilfrid Laurier University either discontinue master's work in geography (particularly if the interested faculty can take part in the programme at the University of Waterloo or other nearby universities) or request that its programme be appraised.

23. In view of the acceptance of these recommendations by COU and the completion of this planning assessment, CUA request the Minister to remove the embargo on geography (except for geomorphology) in accordance with the original announcement of the Minister that new graduate programmes would be embargoed until, for each discipline, a planning study has been conducted.

Notes concerning the recommendations

Re: Recommendation 6

Many specific suggestions are to be found in the consultants' report.

Re: Recommendation 9

The five year plan for graduate work at Brock has been approved by the Minister and includes a master's programme in geography.

Re: Recommendation 17

Reference to the Appraisals Committee is required before proceeding

cont...

with doctoral work in cultural-historical geography.

Re: Recommendation 19

See the University of Western Ontario's comments in Appendix C regarding ACAP's statement on PhD completion rates.

December 3, 1973

ADVISORY COMMITTEE ON ACADEMIC PLANNING

ONTARIO COUNCIL ON GRADUATE STUDIES

REPORT TO THE COUNCIL OF ONTARIO UNIVERSITIES

ON

GEOGRAPHY PLANNING ASSESSMENT

AUGUST 28, 1973

PROCEDURE

On the advice of the Ontario Council on Graduate Studies, the Council of Ontario Universities on September 17, 1971, instructed the Advisory Committee on Academic Planning to conduct a formal planning assessment for geography.

A Discipline Group was formed consisting of a member named by each interested university. A list of members is attached as Appendix E. Professor K. Burley later replaced by Professor R. P. White held the ACAP geography portfolio and attended meetings when ACAP representation was necessary.

The procedure and terms of reference for the planning assessment were approved by OCGS and COU, the latter's approval being received on February 4, 1972. This document is attached as Appendix D.

The Discipline Group began its meetings in October 1971. In accordance with the procedure, the Discipline Group provided ACAP with a list of possible consultants. ACAP obtained the services of Professor A. H. Clark, University of Wisconsin, Professor E. J. Taaffe, Ohio State University, and Professor A. G. McCalla, University of Alberta. Brief curricula vitarum appear as Appendix H. Dr. McCalla played the role of the senior Canadian academic from outside the discipline in this planning assessment. The consultants held their first meeting in Toronto in June, 1972, and discussed, with the Discipline Group, their schedule of visits to the universities. These began in July and continued through December.

The draft report of recommendations was presented to the Discipline Group for informal comments on January 12, 1973, and the final report was subsequently received and distributed February 22, 1973. The Discipline Group and the universities were requested to submit comments to ACAP by March 23.

After receipt of these comments, a subcommittee of four ACAP members met to draft the ACAP recommendations to COU. This subcommittee felt that no interviews with university representatives would be necessary since, in this case, no obscure points were raised. The subcommittee did, however, write to the consultants for interpretation of several points. The Discipline Group comments plus those of the universities appear in Appendices B and C respectively. The latter includes only those comments specified by each university for publication.

This report then is based on these data, reports and comments, and sets out recommendations for COU on the plan for graduate work in geography in the province for the next several years.

As is required, ACAP presents this report directly to COU. It has been transmitted, as well, to the Ontario Council on Graduate Studies and the Council of Deans of Arts and Science for information.

RECOMMENDATIONS

C1:

It is recommended that the Geography Discipline Group in its normal role (see Appendix F) should, in particular, comment on the Planning and Environmental Studies Planning Assessment (as well as the Solid Earth Sciences report as is already provided), advise ACAP on the distribution of specialties at the master's level, particularly the neglected fields (see below) and annually review admissions standards, employment opportunities and enrolments with a view to recommending to ACAP modifications of steady-state enrolments or any other aspects of the plan. It is also recommended that both the Discipline Group and the universities consider means to make use of the talents of suitable professors whose own institutions may not offer graduate work appropriate to their specialties. (See pages A2, A12-13, A14, A17, A34, A39 and recommendation 12, page A41.)

C2:

It is recommended that rates of completion of degrees should be markedly increased. At the doctoral level one degree should be granted annually for each five students enrolled; this steady state should be achieved by 1975-76. (See pages A6, A7 and A10.)

C3:

a. It is recommended that COU and CUA accept the consultants' recommendation that financial support for graduate students should be adequate to permit students to select the most appropriate department for the particular programme desired. Such selection should not be dictated by the level of finances available. The early initiation of the proposed Ontario Graduate Scholarship programme is urged.

b. It is recommended that field work be considered an essential part of graduate education and be adequately financed by the universities. (See page A13.)

C4:

It is recommended to the universities that consideration be given to introducing a part-time master's programme designed especially for the needs of part-time students, particularly at Carleton, Ottawa and York. (See pages A6, A14, and A30.)

C5:

It is recommended that all universities in the province cooperate to strengthen graduate work in geography, to avoid unnecessary duplication and to make use of all the resources available in the province. (See pages A6, A34, A35, to A37. On page A35 the consultants draw attention to certain natural groupings, both regional and intellectual.)

C6:

It is recommended that COU and CUA accept as the steady-state situation, to

be achieved by 1975-76, the award of 24 PhD degrees per year in that part of geogrpahy covered by this assessment, and a concomitant provincial doctoral enrolment of 120 students. In addition, in the steady state, there should be 8 doctoral students in the Guelph programme in agro-meteorology. It is further recommended that COU and the universities accept the enrolment figures of the consultants' report for purposes of internal planning as discussed in the General Introduction, i.e. about 45 at Toronto, 25 at McMaster, and 10 in each of the other five doctoral programmes. Further it is recommended that if, over a period of three years, the enrolment should fall consistently below 90, the enrolment should be distributed amongst universities in such a way as to maintain viable enrolments in the stronger departments, possibly by the mechanism of joint programmes of more than one university. If at any time a university intends to make budgetary or other provision to enrol numbers substantially different from those in this recommendation, it should so notify ACAP.

C7:

It is recommended that COU and CUA accept as the steady-state provincial master's enrolment a figure of about 2.5 times the doctoral enrolment, i.e. slightly more than 300 students for all fields of geography, except geomorphology and pedology.

It is recommended that COU accept the distribution of responsibilities for providing graduate opportunities at the MA level which we show in Table C1, noting that:

(a) each university is expected to select some specialties from amongst those shown for it;

(b) the specialty totals are not to be taken precisely, but as approximate indications of the scale of effort for the province in the field in question;

(c) the university totals are intended as a possible set of steady-state figures, consistent with the recommendations which follow for each university. If a university foresees any significant departure from the level in the following recommendations, it should so notify ACAP.

C8:

It is recommended that Brock University begin graduate work in geography when it is ready. This is consistent with the five-year plan for Brock already approved. (See page A32.)

C9:

It is recommended that Carleton University continue to offer master's work particularly in the fields of cultural-historical and resource analysis geography, planning to double its present enrolment to reach approximately 25 master's students by 1975-76. (See page A31.)

C10:

It is recommended that the University of Guelph plan to enrol about 8 PhDs (in agrometeorology only) by 1975-76 and to offer master's programmes with a total enrolment somewhat greater than its current level, in a selection of the fields indicated for Guelph master's work in Table C1. (See page A30.)

C11:

It is recommended that McMaster University's enrolment be planned at about its present level; that it offer opportunities for doctoral research in climatology, urban-economic, and cultural-historical geography, with primary emphasis on the first two specialties and that it offer programmes at the master's level, in some of the fields shown in Table C1. (See page A25.)

C12:

It is recommended that the University of Ottawa offer the PhD and the master's degree in resource analysis and urban-economic geography, and that it develop plans to grow to enrolments in the region of 10 PhDs and about 30 master's students by 1975-76. Ottawa is asked to explore closer cooperation with Carleton in providing the Ottawa area with graduate work in cartography and remote sensing.

C13:

It is recommended that Queen's University proceed with its PhD programme in urban-economic and cultural-historical geography with primary emphasis on the first of these fields, planning to reach a stable position of about 10 doctoral students. It is advised to plan for stable master's enrolment near the present level, the master's students working in a selection of the specialties indicated in Table C1.

C14:

It is recommended that the University of Toronto plan for doctoral enrolment stabilizing at about the present level or slightly more. All the specialty areas are recommended for doctoral work but it is felt necessary that for the present doctoral work in climatology be done in cooperation with McMaster or Guelph. At the master's level, a substantial increase to about 45 students in specialties selected from those suggested on Table C1 is recommended. (See pages A18, A19, A20, A23, and A24.)

C15:

It is recommended that the University of Waterloo plan to stabilize at about its present enrolment, with work at the doctoral level in resource analysis, urban-economic and cartography and remote sensing, with primary emphasis on resource analysis. Master's work should be carried out in a selection of fields shown in Table C1. (See page A26.)

C16:

It is recommended that the University of Western Ontario take steps to substantially reduce its doctoral enrolment reaching the region of 10 students by 1975-76, maintaining its master's enrolment near the present level. Primary concentration at the doctoral level should be in resource analysis and as a secondary field, urban-economic. Work at the master's level could be in the above two plus cultural-historical.

C17:

It is recommended that master's work at the University of Windsor be maintained at about the present enrolment, concentrating in some of climatology, hydrology, urban-economic, resource analysis and cultural-historical geography. (See page A32.)

C18:

It is recommended that York University proceed with its doctoral programme in cultural-historical geography, urban-economic geography, and resource analysis; with primary emphasis on the first of these fields, reaching a stable enrolment in the area of 10 PhDs by 1975-76. Master's work would be appropriate in any region except cartography, as shown in Table C1, and it is recommended that the university plan for about the current level of master's enrolment.

C19:

It is recommended that Waterloo Lutheran University either discontinue graduate work in geography (particularly if the interested faculty can take part in the programme at the University of Waterloo or other nearby universities) or submit its programme to OCGS to be appraised. (See page A33.)

C20:

It is recommended that it be noted that although the consultants' comment concerning a Water Programme at Trent University may be of interest as a suggestion for research, it is not relevant to graduate work since Trent's approved five-year plan does not contain a programme in either geography or biology. (See page A33.)

C21:

It is recommended that Lakehead and Laurentian Universities take note of the consultants' comments on page A34.

C22:

It is recommended that COU adopt the recommendations of this report, and, in the expectation that its members will act in accordance with them, COU inform CUA that it has adopted these recommendations and request that the embargo on geography (except geomorphology and pedology) be now removed, in accordance with the original announcement of the Minister that new graduate programmes would be embargoed until, for each discipline, a planning study had been conducted.

GENERAL INTRODUCTION

Planning Techniques

For some years now, the universities of Ontario have been committed to the belief that the quality and effectiveness of graduate study in the province can be ensured only by collective and cooperative action. This implies a mechanism for continuing consultation and agreement so that the plans of each university for each of its disciplines are concerted with those of the other universities. At any given time there will exist a plan for the development of each discipline, with agreed and understood roles for each department; since graduate education is the most advanced formal intellectual activity and is, therefore, undergoing change, it is necessary that such plans be kept under regular review and be subject to ready amendment.

The Council of Ontario Universities has assigned to the Ontario Council on Graduate Studies the task of advising it on the development of such plans and of the steps to be taken to carry them into effect. The Standing Committee which carries out these tasks for OCGS is the Advisory Committee on Academic Planning. A significant role is also played by the discipline groups, one of which is established for each subject, with a representative from each interested university. Each discipline group has the function of assisting and advising ACAP in connection with its own subject.

The above may give the impression that the planning activity is fragmented on a disciplinary basis. This would, of course, not be acceptable. Since the development of one department in a university should not be considered independently of its contribution to the rest of its university and of the influence of the university as a whole on the department, it is most important that universities as institutions play a central role in the planning process. One of the most effective ways of doing this is by indicating to ACAP the nature of institutional commitments to a department and institutional aspirations for the department.

The most significant single input to a planning assessment is the set of statements from each university of its plans for its department. When these are subjected to collective scrutiny it may be found that their totality constitutes a reasonable plan for the discipline in Ontario, but in any case this set of plans is the first approximation to the provincial plan, which the planning assessment may have to refine if there are duplicated features, lacunae in offerings, too large a total enrolment, or other reasons to recommend altering some of the university plans. The universities are also involved in that the bodies that act on ACAP reports, i.e. both COU and OCGS, are composed of universities.

The formal documents stating the responsibilities of ACAP and the discipline groups are Appendix F. Briefly summarized, it is ACAP's function to advise on steps to be taken to implement effective provincial planning at the graduate level, to promote the arranging of the graduate programmes of the province in order to enhance and sustain quality and to avoid undesirable duplication, and, when necessary, to carry out formal planning

reviews for disciplines. A discipline group has the responsibility of keeping under review the plans for graduate work in the discipline and making regular progress reports to ACAP in connection with graduate work in that subject. To make all this possible, it has been agreed that ACAP may communicate directly with universities and discipline groups, to request necessary information, to discuss reports, to convene meetings, and to make and receive proposals for the future.

The above information has been given in some detail because it constitutes the mechanism currently approved by COU for cooperative graduate work. It is fair to say that in 1971 there was no mutually agreed plan for graduate study in any discipline. Our task is not only to generate the first such plan for each subject but also to ensure that it is kept under continual review.

There are four fundamental components in the plan. The first is analysis of the fields of study, the formats of study which should be available to prospective students in the province. The second is an estimate of overall provincial enrolment at master's and doctoral levels based principally on the likely numbers of highly qualified applicants. In regard to considerations of manpower needs for the province of Ontario, ACAP is conscious of the unreliability of forecasts and, except in special cases, subscribes to the approach proposed in the Macdonald Report (1969):

> "The country as a whole and the provinces must be concerned about manpower requirements. This concern can be expressed in the first instance through careful survey and forecasting of manpower needs on a continuing basis. Such forecasts should be given wide circulation. It is reasonable to expect that universities will respond by creating additional opportunities for study in the areas of shortage. In addition, the universities through their counselling services have a duty to advise students about the opportunities in various fields from the standpoint not only of intellectual challenge but also of vocational prospects and social utility. The reaction of prospective students to such forecasts is likely to provide an effective control. We believe the market-place, if its trends are made explicit, offers an adequate governor to prevent serious surfeit and to encourage movement of students toward fields of opportunity."

The third component of the plan is an indication of the role to be played by each department in terms of the programme it will offer and its academic emphasis. Cooperative arrangements between departments are stressed. The fourth component consists of an examination of the enrolment plans of the universities and consideration as to whether the universities' plans and the predicted enrolment for this discipline are consistent. If not, some appropriate action should be recommended to COU. It will be seen that although there may also be other aspects, these are four necessary components in such a plan.

In the case of geography, there is no major enrolment mismatch, provided the universities' plans are interpreted as explained in the text in connection with recommendations C6 and C7.

One must hasten to add that the future is uncertain and that to forecast intellectual trends, student interests, and employment markets five years hence is to undertake to examine many variables. Of course, this is not a new exercise since all universities have had to make decisions about building, staff hiring, library expansion, equipment investment and so forth and have done so on a basis of similar forecasts. Perhaps sometimes the forecasts have been more intuitive than consciously recognized, but they have certainly been there. All that is new is to make such plans systematically for the province.

It will be realized that, at a minimum, the ongoing planning procedures we have indicated requires annual reporting of enrolments and annual examination of admissions standards. When there are indications from these or other sources that some aspects of the plan for the discipline are not being realized, it will be necessary for ACAP to initiate a review. Such a review would usually not involve outside consultants. Whether the impetus came from a discipline group, a university or ACAP itself, comments would be sought from all concerned and the review would culminate in a report to COU recommending an amendment to the plan.

If a university notifies ACAP of its intention to depart from its accepted role (for examples to enrol numbers substantially at variance with its understood plan), ACAP will review the situation in the light of any other such notifications it may have received and any other pertinent factors. The extent of any further study would depend on the situation, but if ACAP felt that the university's new plan could be a cause for concern, its first step would be to seek full discussion with the university. Normally there would already have been discussion in the discipline group and between universities and the university would have reached its intention after a careful examination of the general situation of graduate study in the discipline. Thus the ACAP decision would be straightforward and a change in plan would be recommended to COU through OCGS. If, however, ACAP still felt that there was a probability that the university's action might be found, on further study, to be potentially harmful to the system, it would probably next seek comment from other universities concerned and from the discipline group. In any case, ACAP would eventually make some recommendation to COU (through OCGS) concerning the variation.

It is difficult without a concrete case to speculate on likely recommendations, but perhaps two hypothetical situations will illustrate the extremes. If a university indicated that, without any marked change in the academic emphasis of its department, it proposed to arrange to enrol somewhere around 70 graduate students instead of about 50, and if there were no changes at other universities and no potential developments which could be substantially affected, ACAP would presumably simply notify COU of the university's intention and recommend that it be recognized as an alteration in plan for the discipline. At the other extreme if a university proposed to begin a new programme designed to enrol fairly soon some 30 PhD students in a field of the discipline already well covered in other universities, it would clearly be necessary to obtain reaction from the discipline group and from other universities and perhaps even some expert advice, in order for ACAP to generate an advisory position concerning the impact of the proposal on the system and suggestions to the university concerned and to COU. As has been noted, if there had been advance inter-university

discussions and agreement, this would be a positive factor in ACAP's assessment, but there is of course the possibility that the recommendation would call for modification of the university's intention; we take that to be the obvious consequence of system planning. Of course, the university could decide to act in a manner contrary to a COU recommendation, accepting whatever consequences would result; we take that to be the basic right of university autonomy.

GENERAL COMMENTS RE GEOGRAPHY REPORT

Although the consultants give certain recommendations at the end of their report (pages A40, A41) many other important recommendations are found throughout their text. The ACAP recommendations will, therefore, not be numbered to coincide with those of the consultants, but will follow the contents of the report, beginning first with those of a general nature, followed by those on projections and needs and concluding with those recommendations on each of the universities visited. All recommendations are supported by the data available to ACAP with page references to the consultants' report and other sources where necessary. (To avoid possible confusion we number our recommendations with the prefix C, indicating that they are recommendations to COU.)

It seems desirable to comment on the scope of this planning study, particularly since the responses of one or two universities still seem to reflect confusion on this score. Let us say first what it is not. It is not an exercise in 'evaluating' departments; its purpose is to plan, not primarily to evaluate. In order to plan within the provincial system one must have some appreciation of quality and strength of current activity in each university and one must make choices partly on this basis, but one need not decide every aspect of the relative pecking order. In some field, which is perhaps given secondary emphasis at one institution, the quality of the work may exceed that in the same field at another institution which gives it primary emphasis, but it is unimportant to decide this question, so long as the plan envisages work in the field at both places. One can find other examples where a relative comparison is necessary in order to justify some aspect of the plan, but this does not alter the fact that our work is not, primarily, an 'evaluation'.

Secondly, our task is not to plan for departments in toto. Attention is confined to the graduate studies programme. Consequently we are involved with only a segment of the research activity; namely, that segment which involves graduate students. We do not concern ourselves with undergraduate offerings except insofar as they might be affected by proposals at the graduate level and here we rely on each university to make us aware of any such situations which appear to raise difficulty.

Finally, an ACAP report is not a study of departments. It is an effort to plan the graduate work in Ontario in a certain broad field of study. In this case, the scope of the study is reasonably well defined as geography, less geomorphology and pedology. The latter two are excluded because they are also studied in departments of geology in some universities, and because it would make little sense to attempt to plan the future scale of work in geomorphology (or anything else) in two or more separate planning exercises. Since the internal organization of universities is quite varied and a given subject may be pursued in quite different places within the departmental structure on different campuses, the only convenient approach to planning is to cut across departmental boundaries when necessary. ACAP has found instances of this in almost every one of the fifteen or so planning studies in which it is engaged.

It should be clear from what has just been said that the determination of the scope of this assessment implies nothing about the definition of the

discipline of geography nor of the proper activity of a geography department. As the comments from the Discipline Group recognize, each geography department, to see its own future in graduate study, may have to coalesce recommendations from three possible sources--this assessment, the planning assessment in the Solid Earth Sciences, and the planning assessment in Planning and Environmental Studies. (Of course, this last study will have direct relevance only where there is a degree given specifically in Planning or in Environmental Studies and in which the geography department is involved. This is another reminder that the ACAP planning studies are directed at graduate work, not at research per se.) Therefore, in order to get the proposed size of a geography department, the enrolment projections for geomorphology and pedology which we shall propose in the Solid Earth Sciences planning assessment, will have to be added to those given later in this Report.

All the above points were discussed at length in the process of drawing up the terms of reference for this study, and taking them through the stages of OCGS and COU approval.

Since reference is later made to the Appraisals Committee, a few words on its function might be useful at this point. The Appraisals Committee, confining itself to a single programme, decides whether that programme has the level of staff competence, academic structure, research and library resources, etc. necessary to ensure that its students will receive an acceptable training and will on graduation be accepted as qualified. Each university in the province has undertaken not to begin new programmes or major new fields in existing programmes without reference to the Appraisals Committee. Frequently, in this latter case (new fields) the Committee decides that an appraisal is not necessary. This point should be recalled in some cases where new fields are recommended in this Report.

Given then that this planning assessment is dealing with a defined part of geography, one requires some agreement on what sub-fields or specializations one should refer to in discussing its subject matter. The approved procedure (Appendix D) indicates the specialties worked out by the Discipline Group. With one exception, the consultants found these very few broad areas adequate for their purposes and have organized their recommendations accordingly. The one exception is that the consultants have deleted regional geography as one of the sub-fields. Their reasoning is given perhaps most clearly on pages A5 and A22 where they indicate that graduate training is not directed at regional study but rather has a clear topical focus. "Regions provide the vital contextual framework for all topical studies in geography", but sophisticated regional analysis appears to require expertise in several topical fields. It follows that to exclude regional geography as a field of graduate training is not to deny the existence in our departments of scholars who are expert in certain foreign areas and who have experience in inter-departmental work in foreign area studies. One is perhaps distinguishing between graduate training and a kind of research activity which demands a variety of graduate backgrounds.

ACAP feels that the comments made by the Discipline Group and some universities are not inconsistent with the above interpretation of the place of regional geography, since it seems to us that those who made the comments had lost sight of the distinction between research activity and graduate education. We, therefore, accept the consultants' list of specialties for the purpose of setting forth the plan recommended in this Report. At the same time, we note

that our recommendations build in ample opportunity for re-evaluation if, in the course of time, the present exclusion of regional geography as a separate specialty and its inclusion amongst the other categories should prove to be impractical.

SYSTEMS RECOMMENDATIONS

The first group of recommendations deals with geography graduate work and graduate work in general. Please note that ACAP does not attempt to provide full rationale for its recommendations. This document must be read in conjunction with the consultants' report (Appendix A) and appropriate references to it appear for each recommendation.

We were surprised that the consultants felt it necessary to make a specific recommendation on the quality of graduate faculty (page A3) and we suggest that the two universities specifically mentioned in this context elsewhere should review their criteria for tenure and graduate faculty membership.

Recommendation C1:

> It is recommended that the Geography Discipline Group in its normal role (see Appendix F) should, in particular, comment on the Planning and Environmental Studies Planning Assessment (as well as the Solid Earth Sciences report as is already provided), advise ACAP on the distribution of specialties at the master's level, particularly the neglected fields (see below) and annually review admissions standards, employment opportunities and enrolments with a view to recommending to ACAP modifications of steady-state enrolments or any other aspects of the plan. It is also recommended that both the Discipline Group and the universities consider means to make use of the talents of suitable professors whose own institutions may not offer graduate work appropriate to their specialties. (See pages A2, A12-13, A14, A17, A34, A39 and recommendation 12, page A41.)

The consultants feel very strongly that there is a continuing role for the Discipline Group to play. This is, of course, the general position of OCGS and COU. Since some parts of geography are being dealt with in other assessments, it is necessary that the Discipline Group have a voice in the other two assessments mentioned. An overall plan for the role of each geography department should then emerge.

In dealing with the specialties of geography at the master's level, the consultants have stated those in which they feel each university is capable of offering master's thesis work. (See Table C1, page 30.) It is not expected that every university should offer programmes in all the fields where it is considered competent, but rather that 'system' planning is needed to ensure all fields are covered appropriately, including what the consultants call 'neglected' fields: biogeography, cartography and remote sensing. This is clearly a job for initial study by the Discipline Group reporting to ACAP, which will also obtain the views of the universities.

The Group may also find that in a few years time employment opportunities change or there is a decided shift in emphasis in geography or new departmental strengths develop. Any of these factors or similar ones could form the basis for modifications of the plan. The plan is not to be considered permanent and should be re-examined from time-to-time.

Formal re-examination should be under the aegis of ACAP, but the initiative might come from any of a number of sources, such as the universities, the Discipline Group or COU. It is important that there be a regular review of the academic quality of the students. This is dealt with more fully in the text following Recommendation C6.

Recommendation C2:

> It is recommended that rates of completion of degrees should be markedly increased. At the doctoral level one degree should be granted annually for each five students enrolled; this steady state should be achieved by 1975-76. (See pages A6, A7 and A10.)

At present, completion rates are very slow, some 6 degrees for 118 enrolled or 1 in 20, at the doctoral level. This should be replaced by a 1 in 5 rate by steady state in 1975-76. This may appear to be a drastic change, but it is noted that the ABD problem is not found in all institutions.

To convince itself of the validity of this ratio (which is close to those suggested by the consultnats in the other social sciences), ACAP laid out the following enrolment chart.

Calendar Year	Doctoral Year → 1	2	3	4	5	6	7
Y	20						
Y + 1	20	18					
Y + 2	20	18	18				
Y + 3	20	18	18	11			
Y + 4	20	18	18	11	3		
Y + 5	20	18	18	11	3	1	0

One can follow the progress of a given class of students by reading down the diagonal. If 20 students who have completed the MA, begin doctoral work in a given year, this may have decreased by the second year to 18 because of drop-outs. These 18 continue until the end of the third year at which time 7 students or 40% graduate. After another year, 8 more graduate leaving just 3 students. The drop from 3 to 1 in the next year is due to some graduating and some becoming permanent ABD; we assume 1 goes each way. Likewise, we assume half of the sixth year students graduate successful, i.e. 0.5 student. The remainder is assumed not to complete the degree. Hence in any year (the figures are given fully for Y + 5) there are 16.5 degrees awarded for an enrolment of 71, i.e. 1 for each 4.3 students. Thus, our model calculations appear to confirm the consultants' ratio.

The completion rates should be examined annually.

Recommendation C3:

a. It is recommended that COU and CUA accept the consultants' recommendation that financial support for graduate students should be adequate to permit students to select the most appropriate department for the particular programme desired. Such selection should not be dictated by the level of finances available. The early initiation of the proposed Ontario Graduate Scholarship programme is urged.

b. It is recommended that field work be considered an essential part of graduate education and be adequately financed by the universities. (See page A13.)

In Recommendation C2 we urge that the rate of completion of PhDs be markedly increased. From a purely economic point of view, it is to be hoped that this is achieved since both the public and the private costs of lengthy delays are very great. These delays are often caused by the student's need to obtain full-time employment because financial support is not available to him as a full-time student. The 1971 Statistical Report of the Canadian Association of Graduate Schools gives the following figures for degree completion:

FOR ONTARIO (1970-71)

	Enrolment (F.T.+ P.T. Doctoral)	Percentage Part-Time	Degrees Awarded	Ratio
Geography	112	18.8	7	1:16
Humanities (Division A)	1625	26.5	92	1:17.7
Social Sciences (Division B)	1684	24.2	97	1:17.4
Physical Sciences (Division C)	2127	10.5	304	1:7.0
Biological Sciences (Division D)	797	9.8	149	1:5.3

FOR WESTERN PROVINCES

Geography	57	15.8	6	1:9.5
Social Sciences (Division B)	790	26.0	89	1:8.9

Why are the completion ratios so much lower than the one in five which we recommend? One reason might be excessively permissive admission standards, but although this must of course be watched, our consultants do not suggest that this has been a major problem in geography in Ontario. Another reason has been rapid growth. In a growth situation, the people graduating in any year began their doctoral work when enrolments were smaller, and consequently, the 1970-71 figures do not represent a steady-state ratio. But perhaps the major factor in

the humanities and social sciences is the inclusion in the enrolment of a very large number of students who, just at the point when they were beginning serious research on their theses, discontinued their full-time studies. They presumably would not have done so had there been reasonable support available. After all, another year as a student, with an income of $4000 to $5000 and a completed thesis, would be much better than experiencing the pressures of attempting to do research and writing on a part-time basis over several years while one's career marks time, even at a salary substantially greater than the student stipend. Moreover, as our consultants stress, the quality of the work done is liekly to be greater if the student completes his thesis on a full-time basis. The inefficiencies of the slower process also make it a greater financial burden on the university and hence on the public purse.

The ABD problem may begin now to decrease, since there will be a shortage of employment opportunities for those without completed degrees. It is our view that this problem should have become less in recent years with the growth of the Canada Council Fellowship programme, particularly its extension to the thesis-writing year, with the provision of Ontario Graduate Fellowships and with the opportunities to employ doctoral candidates as part-time teaching assistants. We urge the importance of carefully coordinated financial support from these various sources so that each student may complete his programme. This kind of coordination should become much more feasible as the ACAP planning assessments are successively completed and we begin to develop an agreement on the size of the provincial doctoral enrolment--for example, 120 in geography according to Recommendation C6 of this Report.

One of the most crucial elements in the student support pattern will be the Ontario Graduate Scholarships already approved by COU and CUA. We urge the implementation of this scheme by the Government of Ontario at a level of funding adequate to support a realistic graduate system.

It will be recalled that this Graduate Scholarship proposal envisages portable awards so that a student may select his university on academic considerations. This, coupled with the COU agreements and government regulations concerning earned income, would ensure that universities would not be selected on the basis of the level of finances available.

Part b of this Recommendation refers to the expenses of field work. It is, of course, unreasonable to expect students to pay travel and other costs of field work from their own pockets and, where professors' research grants are insufficient, the universities should seek to cover these expenses as a recognized cost of research, analogous to the cost of equipment and supplies in other disciplines.

Recommendation C4:

> It is recommended to the universities that consideration be given to introducing a part-time master's programme designed especially for the needs of part-time students, particularly at Carleton, Ottawa and York. (See pages A6, A14 and A30.)

Some geography departments, in particular that at York, are conscious of the need of some students to take all their graduate work on a part-time basis. At present, these students take an unduly long time to do the regular full-time programme. Often the stumbling block is completion of research for a thesis, and the consultants recommend introducing non-thesis programmes for these students. However, we note the counter-view of Carleton University that thesis work may be possible. We feel the important thing is that some effort be made to design a master's programme with part-time students in mind. Carleton and Ottawa should also be involved in this project because of the potential for part-time students in the federal government service.

Recommendation C5:

> It is recommended that all universities in the province cooperate to strengthen graduate work in geography, to avoid unnecessary duplication and to make use of all the resources available in the province. (See pages A6, A34, A35 to A37. On page A35 the consultants draw attention to certain natural groupings, both regional and intellectual.)

One of the important themes throughout the consultants' report is cooperation. This will be dealt with more thoroughly under each individual university. The means of cooperating have been purposely left vague in order to encourage the universities to explore all possible means of achieving this. The OCGS arrangement to facilitate students taking courses in other campuses, joint faculty appointments and inter-university courses such as the one in Integrated Aerial Surveys in which four universities cooperate are a few of the examples of present cooperation. COU and OCGS should be kept informed of these and any new ventures.

It is easy to point out difficulties in cooperative arrangements--geographical separation, differing standards for promotion, differing graduate school regulations, inter-university financial transfers--but of course the challenge facing us in Ontario is to find ways of overcoming these difficulties, many of which are more apparent than real. A great deal depends on the frame of mind. One can either say "but, my God, we are 40 miles apart" or one can say "after all, we are only 40 miles apart". It is gratifying to some members of ACAP that in one situation of which they are aware the former comment was replaced by the latter, after a few months of realistic examination.

Recommendation C6:

> It is recommended that COU and CUA accept as the steady-state situation, to be achieved by 1975-76, the award of 24 PhD degrees per year in that part of geography covered by this assessment, and a concomitant provincial doctoral enrolment of 120 students. In addition, in the steady state, there should be 8 doctoral students in the Guelph programme in agrometeorology. It is further recommended that COU and the universities accept the enrolment figures of the consultants' report for purposes of internal planning as discussed in the General Introduction, i.e. about 45 at Toronto, 25 at McMaster, and 10 in each of the other five doctoral programmes. Further it is recommended that if, over a period of three years, the enrolment should fall consistently below 90, the enrolment should be distributed amongst universities in such a way as to maintain viable enrolments in the stronger departments, possibly by the mechanism of joint programmes of more than one

Recommendation C6 (continued)

> university. If at any time a university intends to make budgetary or other provision to enrol numbers substantially different from those in this recommendation, it should so notify ACAP.*

The consultants' projections of academic employment are based on a report by COU research staff (Appendix G). The consultants have selected for their estimate the figure resulting from assuming a 5% per annum increase in undergraduate enrolment in geography and no change in staff-student ratio. On this basis the Ontario universities would require 19 new PhDs a year. To this the consultants add 5 for non-university employment. This production rate is deemed necessary to meet the needs and responsibilities of geography in Ontario.

Although we concur with this finding, these assumptions should be discussed further. During the five year period, the 18-22 year old age group will grow at the rate of only 4.4% a year. There is, therefore, an assumption that a larger fraction of young people will be studying geography at university. Even if the general university participation rate does not increase, we believe that the larger value for geography might be justified, since the great current problems in ecology and urban living are likely to attract students to subjects like geography.

We should, however, examine the consequences of a different model. Let us suppose that the enrolment increases by only 3% per year but that the staff-student ratio remains unchanged. Then a repetition of the COU calculation leads to a requirement by the Ontario universities of only 14 PhDs per year. However, the number required in the universities of Canada would be about 42. In 1971, 45% of the doctoral geography students in Canada were enrolled in Ontario (CAGS Statistical Report). Consequently, to meet the needs of Canadian universities, Ontario would produce 19 PhDs per year, that is 45% of 42. Coincidentally, this also leads us to the same estimate as the consultants reached on different hypotheses. Of course, if one extended their basis to all of Canada and realized that Ontario produced 45% of the geography PhDs, one would be led to a number higher than 24.

It can be argued that one should use a lower faculty-student ratio, particularly for incremental appointments. Introducing this factor in the most pessimistic way would reduce the total by about 4. On the other hand, we agree with the consultants that they are conservative in the estimate of non-university needs.

In awareness, then, of these various uncertainties, we recommend adopting 24 per year as a very reasonable number for forward planning. We have already argued the use of a ratio of 5:1 for enrolment to graduation and are, therefore, led to recommend enrolment of 120 students. It will be understood that this includes both full-time and part-time doctoral students, that it is to be reached in 1975-76, and that it is to be thought of as a steady-state situation since, as far as one

* For discussion of this point, please see page 8.

can foresee at this time, growth cannot be anticipated in the 1976-81 period.

A further comparison which suggests the reasonableness of the enrolment of 120 is to note that in 1971-72 the enrolment was 109. The increase of only 10 students in four years represents a rate of 2% per annum. In order to provide sufficient opportunity for promising new students, it will be important to reduce the ABD number rather quickly and to ensure the regular progress of the full-time students towards their degrees.

The distribution of the recommended provincial doctoral enrolment of 120 amongst the universities is amply justified in the consultants' report and it has been accepted in the university comments appended to this report, usually with the request that there should be an explanation of what variations would be consistent with the recommended number. In response, we would suggest that for Toronto and McMaster any three-year average in the steady state would lie in the ranges 40-50 and 20-30 respectively, and that marked departure from these ranges might indicate a need to re-examine the plan. It is harder to say how to deal with steady-state enrolments of 10. Again, of course, one would look at three-year averages to smooth out fluctuations, but on the basis of our consultants' responses to a specific query, we suggest that it would be desirable to re-assess the academic viability of a programme which consistently had five or fewer students. There is the standard understanding that if a university intends to make provision to enrol a substantially different number of students it would so notify ACAP.

Many of the comments from universities as well as that from the Discipline Group make reference to the consultants' recommendation on the course of action to be followed in case of a short fall in doctoral enrolment. The consultants feel that Toronto and McMaster, with their departments of international standing, should be maintained before the others. Thus, if doctoral enrolments fall to 80, Toronto with 40-50 and McMaster with 20-30 would absorb 60-80 students and could absorb a few more, and the consultants recommend that the other departments would be phased out temporarily.

If a number of universities offer doctoral programmes and the number of students interested is too small to provide lively student groups at all of them, a number of alternative possibilities arise. In the absence of any coordinated planning, all of them might struggle along with a few students each and there would be no programme of very high quality anywhere. Alternatively, aggressive recruiting or the presence of fellowships at one or two of the universities might populate them and leave the others empty. As current trends in the United States are demonstrating, it would not necessarily be the better departments which found themselves with the students and we might again have no very good programmes. In a situation where there is cooperative planning two strategies are apparent. One is to share the poverty and the other is to concentrate one's resources in the better departments and suspend the doctoral work at the others, involving the professors throughout the system in the remaining doctoral programmes, insofar as this is feasible. From the point of view of the benefit of the student and of society generally, we have no hesitation in recommending the second of these two courses. This would seem particularly clear if one or two of the departments

represented a truly outstanding aggregation of scholars so that it would be a blow to the discipline on an international scale if their activity in research and in the training of doctoral students were to be permitted to diminish.

There is, of course, the problem of identifying the better departments. When a planning study has just been completed, as in this case, the answer is at hand. But we neither recommend nor foresee such a low enrolment of geography PhD students. However, if it does become apparent over a few years that the total enrolment is consistently around 90 it would then be necessary to re-examine the question of which departments should be maintained. It is quite possible that in three or four years additional universities might be seen to have developed some particular strengths which should be preserved. Since the Discipline Group will be assisting ACAP in monitoring enrolment trends in geography as a whole and in the specialties, there will be advance warning of such a situation developing and ample time to make the wisest--but hardest--decision. This might involve establishing some joint programmes similar to the Guelph - McMaster PhD programme in philosophy.

We are also recommending acceptance of the PhD specialties for each department suggested by the consultants. Some misunderstanding has arisen over the allocation of 'P' and 'S' to the geography subdivisions at the doctoral level. The consultants have confirmed that these symbols are meant to convey relative strengths in any one department. The application of an 'S' does not indicate that the consultants hold a low opinion of the work done in that specialty but rather that another subdivision, marked 'P' is stronger in that department and with the majority of the departments having only 10 doctoral students, the stronger field should be given primary emphasis.

Recommendation C7:

It is recommended that COU and CUA accept as the steady-state provincial master's enrolment a figure of about 2.5 times the doctoral enrolment, i.e. slightly more than 300 students for all fields of geography, except geomorphology and pedology.

It is recommended that COU accept the distribution of responsibilities for providing graduate opportunities at the MA level which we show in Table C1, noting that:

(a) each university is expected to select some specialties from amongst those shown for it;

(b) the specialty totals are not to be taken precisely, but as approximate indications of the scale of effort for the province in the field in question;

(c) the university totals are intended as a possible set of steady-state figures, consistent with the recommendations which follow for each university. If a university foresees any significant departure from the level in the following recommendations, it should so notify ACAP. (See last paragraph of the following text.)

The Discipline Group comments on this matter in its response, page B2, paragraph 3. It seems to be objecting to any restraints being imposed on the system. The row totals show an approximate enrolment level consistent with the recommendations for each university, the columns show enrolments in each specialty, the figures to be treated as in (b) and (c) above. To object to this much planning is to object to any plan at all. It is noted that the individual universities do not share this blanket objection raised by the Discipline Group.

The consultants have confirmed our interpretation of the meanings of these figures. The consultants have in no way said that university A should have X students in specialty B. The matter of the emphasis each university places on each field within its master's enrolment, so as to achieve about the right amount of activity in each field in the province is something for discussion in the Discipline Group and recommendation to ACAP, resulting in advice to universities. Recommendation C1 also calls for annual reports to ACAP on enrolment levels, shifts in emphasis and new, innovative, areas. In this way acceptance of the specialty enrolments is not restrictive.

ACAP has no hesitation in making this recommendation, since the consultants have given the matter careful consideration, since nothing in the universities' comments seems to provide sufficient ground to alter their judgements, and since Recommendation C1 makes the necessary and essential provision for conscious, controlled experimentation, innovation and modification of the plan, including possible changes in the total enrolment of 300.

The number 300 is greater than current MA enrolment, and is arrived at in a somewhat ad hoc way. One university comments on the possibility of an increase because of special programmes for teachers. There are recommendations about MA(T) enrolments in the ACAP planning assessment for Education, where some increase is foreseen in the next few years, but that does not change the current recommendation here for 300 as the geography MA figure.

The original unviersity submissions indicate plans for a total of about 400 MA students for 1976. The numbers recommended by the consultants are based on their view that 300 is a more realistic figure, and the enrolments suggested for each university represent their view of the best figure to be used by that university for planning purposes, taking account of its capacity, attractiveness to students, and so forth. Naturally this recommended number is often smaller than the university's original projection. However, none of the university responses to the consultants' report question the recommended master's enrolment.*

It follows from this discussion that the universities' current plans (presumably modified by consideration of the consultants' report) are consistent with the anticipated provincial enrolment. Consequently there appears to be no need for

* There is one exception. See Recommendation C10.

enrolment 'controls', and the natural response of the system may lead gradually to a somewhat, but not markedly different enrolment distribution than that shown in Table C1. There should be no surprise if the provincial total is also found to be rather more or less than the 323 shown there. This would still be satisfactory, provided that no department had developed problems with its academic standards due either to too many students for its resources or too few students for mutual stimulation informally and in seminars and courses.

Consequently no enrolment control is recommended other than annual reporting of enrolments and admissions, and the standard understanding that a university which takes action likely to produce an enrolment markedly different from that recommended should notify ACAP. (See page 8 of the General Introduction.)

UNIVERSITY RECOMMENDATIONS

Now follows a section with recommendations concerning each of the universities. For each we show enrolment recommended at steady state and the recommended specializations. Each section will also include a short paragraph on cooperative efforts needed or encouraged. Wherever numbers are quoted they are to be interpreted as explained in the General Introduction and more particularly in the text following Recommendations C6 and C7.

Recommendation C8:

> It is recommended that Brock University begin graduate work in geography when it is ready. This is consistent with the five-year plan for Brock already approved. (See page A32.)

ACAP, of course, notes the necessity for a favourable appraisal at that time.

Recommendation C9:

> It is recommended that Carleton University continue to offer master's work particularly in the fields of cultural-historical and resource analysis geography, planning to double its present enrolment to reach approximately 25 master's students by 1975-76. (See page A31.)

The doubling of Carleton's enrolment is in part a response to the large number of students, many government employees, who wish to do their degree on a part-time basis. (See Recommendation C4.) Since doctoral work is given at Ottawa and not at Carleton, the two departments could cooperate to strengthen that programme using some Carleton faculty members. Carleton should also endeavour to cooperate with Queen's in cultural-historical geography helping to exploit the rich library and documentary resources in Ottawa and to add strength to the Queen's doctoral programme. Carleton, in cooperation with Ottawa, should consider offering a programme in cartography and remote sensing, one of the neglected fields of study, and a field of interest to some government departments. The Carleton University comments point out some problems involved in cooperative work, but we are sure most of these can be overcome, given the will to do so.

Recommendation C10

> It is recommended that the University of Guelph plan to enrol about 8 PhDs (in agrometeorology only) by 1975-76 and to offer master's programmes with a total enrolment somewhat greater than its current level, in a selection of the fields indicated for Guelph master's work in Table C1. (See page A30.)

A question was raised as to whether the masters' students in agrometeorology were included in the total of 15 master's students. ACAP has written to the geography consultants for clarification and found this was their intention.

Of course, since the numbers are recommended as enrolments to be used for planning purposes only, there is little operational significance to a distinction between 15 and 18.

Guelph was urged to cooperate with McMaster and Toronto in climatology and with Waterloo in resource analysis.

Guelph draws attention to its unusual departmental structure. We once again draw attention to the comments in the fourth paragraph on page 10 where we point out that an ACAP planning study is for an area of graduate work, not for departments; when more than one department is involved in an area it is up to the university to ensure that all relevant units make their contribution to the assessment.

Recommendation C11:

> It is recommended that McMaster University's enrolment be planned at about its present level; that it offer opportunities for doctoral research in climatology, urban-economic, and cultural-historical geography, with primary emphasis on the first two specialties and that it offer programmes at the master's level, in some of the fields shown in Table C1. (See page A25.)

Cooperation is urged between McMaster and Guelph in climatology and one or both of these universities is asked to provide the support which Toronto may seek for doctoral work in this field. There may also be opportunities for mutually advantageous cooperative ventures between the two strong urban-economic groups at Toronto and McMaster.

Recommendation C12:

> It is recommended that the University of Ottawa offer the PhD and the master's degree in resource analysis and urban-economic geography, and that it develop plans to grow to enrolments in the region of 10 PhDs and about 30 master's students by 1975-76. Ottawa is asked to explore closer cooperation with Carleton in providing the Ottawa area with graduate work in cartography and remote sensing.

A special point has been made in this Report in urging closer cooperation between Carleton and Ottawa. As has already been noted under the Carleton recommendation, both should explore the possibility of supplying the capital area with part-time graduate work in cartography and remote sensing although at this time, in the consultants' opinion, neither has the necessary staff. Certain Carleton faculty, who may wish to work with doctoral students in the fields of the Ottawa PhD programme, might be invited to accept part-time involvement at Ottawa under suitable inter-university arrangements. As we noted above, we do not wish to be specific about the nature of this proposal; various techniques for real, rather than paper, sharing of staff expertise are developing in Ontario and experimentation with new forms is to be encouraged.

Recommendation C13

> It is recommended that Queen's University proceed with its PhD programme in urban-economic and cultural-historical geography with primary emphasis on the first of these fields, planning to reach a stable position of about 10 doctoral students. It is advised to plan for stable master's enrolment near the present level, the master's students working in a selection of the specialties indicated in Table C1.

The consultants recommended that major appointments be made in each field and Queen's comments show this has been done in urban-economic geography. Before the university begins doctoral work in cultural-historical geography (a field not mentioned in the September 1971 approval of its programme) reference would need to be made to the Appraisals Committee, which would not necessarily require a full appraisal of the new field.

Although cooperation is somewhat more difficult between Queen's and other Ontario universities because of its location a careful study should be made of the propositions that the work in the cultural-historical field would be strengthened by ties with Carleton and use of the resources to be found in the capital.

Queen's raised a question concerning its activity in the field of climatology at the master's level. In choosing its actual master's fields from amongst those marked + in Table C1, the university should be aware that the exclusion of Queen's in the recommended universities for climatology was not an oversight on the part of the consultants.

Recommendation C14:

> It is recommended that the University of Toronto plan for doctoral enrolment stabilizing at about the present level or slightly more. All the specialty areas are recommended for doctoral work but it is felt necessary that for the present doctoral work in climatology be done in cooperation with McMaster or Guelph. At the master's level, a substantial increase to about 45 students in specialties selected from those suggested on Table C1 is recommended. (See pages A18, A19, A20, A23 and A24.)

Toronto is presented as being capable to conduct programmes in all fields at the doctoral level when steady state has been achieved. But at present, it is advised to develop close cooperation with McMaster in any doctoral work in climatology. It is also strongly urged that close contacts be developed with York in cultural-historical geography and with McMaster in urban-economic, in each case to raise the student's opportunities to a qualitatively higher level by interaction between two groups, each individually of a high level. Work in the philosophy of geography was considered by the consultants and enrolment in this field is included in the totals in the cultural-historical and other subdivisions.

Recommendation C15:

> It is recommended that the University of Waterloo plan to stabilize at about its present enrolment, with work at the doctoral level in resource analysis, urban-economic and cartography and remote sensing, with primary emphasis on resource analysis. Master's work should be carried out in a selection of fields shown in Table C1. (See page A26.)

ACAP concurs with the consultants that Waterloo is a suitable site for work in remote sensing and especially computer cartographics, a field which should be developed. It also takes note of Waterloo's comment on the financing of such a programme. (Page C18 University of Waterloo, point 4). It is hoped that Waterloo might find ways to solve this difficulty.

Waterloo's cooperative efforts should include Guelph in the fields of climatology and urban-economic geography at the master's level. Particular thought should also be given to helping with Waterloo Lutheran's programme. This will be mentioned again under Waterloo Lutheran, Recommendation C19.

We have referred Waterloo's comment on cultural-historical geography (page C18, point 3) to our consultants, who see no reason to change their original opinion, and the evidence presented is insufficient for ACAP to disagree with the consultants' findings. If the university wished, a question of this kind could be tested by a referral to the Appraisals Committee. Presumably a favourable verdict would put a + sign in the cultural-historical column of Table C1, but this would not of itself indicate that good system planning would allocate students to the specialty, since a selection is necessary amongst those groups considered competent. (See Recommendation C1 and C7.)

Recommendation C16:

> It is recommended that the University of Western Ontario take steps to substantially reduce its doctoral enrolment reaching the region of 10 students by 1975-76, maintaining its master's enrolment near the present level. Primary concentration at the doctoral level should be in resource analysis and as a secondary field, urban-economic. Work at the master's level could be in the above two plus cultural-historical.

It would appear that the department has become seriously over-extended and should concentrate on the completion of the theses of the large number of part-time students and of its current full-time enrolment before it begins to accept more than an occasional new student.

Cooperation is looked for between Western and Waterloo in resource analysis, and to a lesser extent with Windsor.

Recommendation C17:

> It is recommended that master's work at the University of Windsor be maintained at about the present enrolment, concentrating in some of climatology, hydrology, urban-economic, resource analysis and cultural-historical geography. (See page A32.)

Windsor offers good terminal master's programmes but should be encouraged to look into cooperative efforts with Western in resource analysis and urban-economic geography. It is recognized that cooperation with universities in Michigan may also be mutually beneficial.

Recommendation C18:

> It is recommended that York University proceed with its doctoral programme in cultural-historical geography, urban-economic geography, and resource analysis with primary emphasis on the first of these fields, reaching a stable enrolment in the region of 10 PhDs by 1975-76. Master's work would be appropriate in any area except cartography, as shown in Table C1 and it is recommended that the university plan for about the current level of master's enrolment.

York's master's population takes into account the large number of part-time students at York (see ACAP Recommendation C4). The closest possible cooperation with Toronto should be established in the three doctoral areas, with Waterloo in resource analysis and with McMaster in urban-economic geography. We believe these three fields to have been covered by the 1971 approval of the Appraisals Committee.

York's comment on primary and secondary doctoral emphasis is covered by our approval of the consultants' comments on page 20 of this Report.

Recommendation C19:

> It is recommended that Waterloo Lutheran University either discontinue graduate work in geography (particularly if the interested faculty can take part in the programme at the University of Waterloo or other nearby universities) or submit its programme to OCGS to be appraised. (See page A33.)

If the programme is continued and favourable appraisal is not obtained by September 1974, BIU entitlement should cease. This appears to be the only action possible in the light of a consultant report recommending appraisal of an hitherto unappraised programme.

Recommendation C20:

> It is recommended that it be noted that although the consultants' comment concerning a Water Programme at Trent University may be of interest as a suggestion for research, it is not relevant to graduate work since Trent's approved five-year plan does not contain a programme in either geography or biology. (See page A33.)

Recommendation C21:

> It is recommended that Lakehead and Laurentian Universities take note of the consultants' comments on page A34.

Lakehead's five-year plan for graduate work submitted and approved since the consultants' report was written, does not include a programme in geography. Laurentian's five-year plan is not yet full developed, but it is not expected to include a MA in geography.

RECOMMENDATION FOR COU ACTION

Recommendation C22:

It is recommended that COU adopt the recommendations of this report, and, in the expectation that its members will act in accordance with them, COU inform CUA that it has adopted these recommendations and request that the embargo on geography (except geomorphology and pedology) be now removed, in accordance with the original announcement of the Minister that new graduate programmes would be embargoed until, for each discipline, a planning study had been conducted.

Note that recommendations concerning geomorphology and pedology will be made in our report on the Solid Earth Sciences planning study.

TABLE C1

Master's Programmes

	Master's Enrolment	Biogeog.	Cartog.[1]	Climatology	Hydrology	Urban-Econ.	Res. Analy.	Cult.-Hist.
Brock [2]	8					+		
Carleton	25	-	-	-	+	+	+	+
Guelph [3]	15	-	-	+	-	+	+	+
McMaster	25	-	+	+	+	+	+	+
Ottawa	30	+	-	-	-	+	+	+
Queen's	20	-	+	+	+	+	-	+
Toronto	45	+	-	+	+	+	+	+
Waterloo	35	+	+	+	-	+	+	-
Waterloo Luth.[4]	?							
Western	50	-	-	-	+	+	+	+
Windsor	20	-	-	+	+	+	+	+
York	50	+	-	+	+	+	+	+
System Total	323	5	5	20	5	150	65	65

+ Competent to offer Master's programme

- Should not offer programme

1. Cartography includes remote sensing.
2. The enrolment figure is taken from the Brock five-year-plan for graduate work, already approved by the Minister, but some growth would be desirable (page A23).
3. Hydrology at Guelph is in the School of Engineering and the Department of Land Resource Science.
4. See Recommendation C19.

The university enrolments shown are for master's enrolment (full-time and part-time) in geography, exclusive of geomorphology and pedology. Each university is expected to offer programmes in some, but not necessarily all of the specialties for which competence is shown. See text with Recommendation C7. If a university is not listed, it is because it has indicated no intention of graduate work in geography during the planning period.

A P P E N D I X A

REPORT OF

GEOGRAPHY CONSULTANT PANEL

to

ADVISORY COMMITTEE ON ACADEMIC PLANNING

ONTARIO COUNCIL ON GRADUATE STUDIES

A. H. Clark, E. J. Taaffe and A. G. McCalla

February 19, 1973

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1. INTRODUCTION

The worldwide upsurge of both confidence and competence in the academic discipline of geography during the past thirty years has been shared fully by the Province of Ontario. It is doubtful that any single province or state in North America has a better representation of scholarly, scientific research interests among its academic geographers. We feel that our suggestions for staffing and the support of graduate students are conservative; we urge every effort to implement them, with special attention to the new programmes which have been appraised and approved at Queen's and York Universities, but which are now embargoed. Indeed we feel that modest increases above the numbers of students we have recommended may be justified even within a general academic steady state, should that occur, during the next three to four years.

By its nature geography is a highly diversified discipline. Some of the work being done in geography departments in Ontario universities of necessity overlaps work traditionally carried on in other departments. It is undoubtedly for this reason that geomorphology and soils geography were excluded from the specialties to be covered in this assessment even though one or both were strong in several of the departments visited. Many of the geographers interviewed protested the separation of these subfields from climatology and hydrology. We met with groups of physical geographers at several universities and feel strongly that, in any overall evaluation of geography departments per se, these specialties must be included to give a full picture of each department. However, reference to geomorphology and soils geography in this report is made only where we feel them to be important in roles supportive of the specialties assigned to us.

We have been supplied with a preliminary draft of the set of

recommendations prepared by the Solid Earth Sciences consultants but have, of necessity, had no contact with the consultants on Planning and Environmental Studies since the panel had not yet started its assessment. We therefore had only partial glimpses of the work in city and regional planning and of the general study of the environment for planning purposes. We feel that geographers have major inputs to make in both the theoretical background and the operative implications of such planning. They should have full participation in any programmes suggested by the ACAP consultant panel on graduate education in Planning and Environmental Studies to ensure maximum effectiveness of such programmes.

2. CONTEXT OF REPORT

(a) Basis of Assessment

Each of the fifteen Ontario universities has a Department of Geography and graduate programmes are now offered at all but Brock, Lakehead, Laurentian and Trent. The departments at Brock and Trent were assessed since they are proposing Master's programmes to be started within the next five years. We met with the chairmen of the departments at Lakehead and Laurentian but did not carry out full assessments.

The assessment of each of the other thirteen departments has been carried out as consistently as possible. It was recognized from the start that the tasks assigned to us cover only part of the total responsibilities of the departments concerned. The undergraduate education function is a very important part of the work of all departments and is clearly predominant in many of the departments visited, and will remain so during the period under review. It became clear to us, and it is also clear to some of the department chairmen, that some members of the academic faculty are not research scholars and cannot be expected to contribute substantially to the graduate work being done or planned in these departments. We were told that some of these faculty members are superb teachers and are great assets to the undergraduate programmes. They cannot, however, be considered as part of the faculty resources for the direction and supervision of graduate programmes. It appears to us that some of the administrative officials at a few of the universities do not really recognize this fact.

In assessing individual faculty members and the total departmental

strength to support and carry through graduate programmes, we have given particular attention to the scholarly work produced by faculty members with special emphasis on publications in refereed journals, and books or monographs which have received substantial critical acceptance. In our view, only established scholars should direct Ph.D. programmes, and even research for Master's theses should be guided only by staff members with strong personal research commitments.

The information used in this assessment was obtained from the documents supplied, from the visits to the departments, and discussions with the chairmen, faculty members, graduate students and administrators. The documents supplied to us were very useful before, during, and after our visits. The uniform format used by departments made the documents easy to follow and compare. We also appreciate the cooperation of departments in sending additional information that was requested. The original documents were frequently updated during the discussions with the chairmen and individual faculty members. This supplementary information has frequently been most useful. Additional material has been sent to us in written form by a few faculty members. The final meeting with the Discipline Group was very useful.

It must be noted here that areas of primary strength have been identified and our considerations assume that if faculty members contributing to this strength leave a department, they will be replaced by new faculty in this same area. If this is not done, the department concerned might not - probably would not - maintain its position of strength.

(b) ACAP Categories

The academic discipline of geography is not itself subject to categorical definition. It has therefore always presented nearly insoluble problems in terms of categorical subdivision. The Ontario Discipline Group arrived at a compromise that apparently has satisfied few of the geography departments. Some of the departments accepted it as a basis from which to work, whereas others virtually ignored it and invited us to make our assessments on their individually perceived sets of subdivisions. We found these helpful in assessing individual departments and in understanding their views of themselves, but for comparative purposes we have used the compromise established by the Discipline Group. We have eliminated Regional as a separate specialty, although, as will appear, we think

regional expertise should be strengthened.

In general, Biogeography, Hydrology and Climatology gave us no difficulty. Geomorphology and Soils Geography did not come within our purview but where we had a chance to meet representatives of these subfields - and see the department whole, so to speak - it has helped us to understand better those biophysical interests we did have to assess, whether in themselves or as contributors to Resource Analysis. Perhaps in most universities other than McMaster, Guelph, and Queen's, the contribution of any of these three subfields to Ph.D. programmes is largely supportive of explicitly Resource Analysis study. They are represented more clearly in themselves at the Master's level. Graduate education in Cartography, particularly as related to computer graphics and information systems, we found underrepresented in the province and we think it appropriate for graduate study to have Remote Sensing attached to Cartography as a single category for purposes of this report.

Since the primary interests of geographers have long been in economic concerns and since a large proportion of people in the Western world are now urbanites, it is not surprising that the Urban-Economic category is the largest. Although quantitative methods are now in virtually universal use throughout the broad spectrum of geographical research, this is the area in which they have been most extensively and intensively employed and where one finds most expertise in their use and most training to develop such expertise. We interpreted this category broadly to include virtually all urban study (except the explicitly historical), most of transportation, and various aspects of primary resource exploitation not clearly covered in Resource Analysis. We have also included virtually all of what has been called "spatial" or "locational" analysis, theoretical spatial study (as in flow and diffusion models), and at least some aspects of behavioural and/or social geography, including much settlement and population study, which otherwise is included in Cultural-Historical. Some of the rather arbitrary assignments were made on the very pragmatic basis of whether the methodology of research and point of view seemed to accord best with what we perceived as core interests or practices in one of the three main "human" categories.

We have used Resource Analysis as a unifying sort of category, bringing together the interests of biophysical and socio-politico-economic

geography rather better than either of the other major headings. Here we placed, or found, most of the studies of the interplay of man and his biophysical environment, of "terrain sensitivity", of "pollution", and the like. Rather notably, in Ontario, this is where the considerable geographical interest in the recreation industry and in the protection of natural resources for recreation is placed. Many cultural-ecological interests seemed to us to overlap both the Resource Analysis and Cultural-Historical rubrics and, as in other cases, we simply divided these as seemed most reasonable. For resolution of borderline problems we found the percentages of individuals assigned to different interests less helpful than we had hoped; often we were forced to depend on individual responses to our questions, on comments of executive officers and other colleagues, and on the reading of the individual vitae.

The "cultural" part of Cultural-Historical is often inextricably intertwined with explicitly historiographically biased interests, but it also varies over a broad range from the sociology-anthropology borderlands, through political-behavioural studies to some of the ecological man-land interests just mentioned. Much of the political and historical-cartographic interest seems to fit easily into the Cultural-Historical category, and so too do many otherwise unclassified "regional" studies.

We did not use the Regional category. In fact, people do not seem to be in training through Master's or Ph.D. programmes as specialists in regions as such, but we found the category very helpful in the supporting documents to identify people and departments with substantial regional expertise. Among those faculty who assigned substantial portions of their time and interest to the Regional category we attempted to identify topical interests.

(c) Supportive Elements

The supportive elements considered in the assessments included those within a particular university, cooperation with other universities, and assistance from government or other institutions. Such support clearly varies widely in different departments and is related, at least in part, to location. Perhaps the best examples of location affecting support are the great advantages the departments at Ottawa and Carleton enjoy by being located adjacent to many federal government departments which have geographical interests and facilities. Some of these factors will be considered

more specifically in later sections of the report. We feel that many of the programmes could be profitably strengthened by inter-university co-operation, including cross appointments of some individual faculty members at one university to the graduate faculty (or equivalent status) at another university. Some examples of this kind of association will be suggested.

(d) Full-time and Part-time Students

The figures presented in Table I show that there have been appreciable numbers of part-time graduate students registered for geography programmes at some Ontario universities. This is particularly true at the Master's level. There are clearly two distinct types of part-time students, but these are not distinguished in the data supplied to us nor in Table I.

The first type includes those students in both Master's and Ph.D. programmes who, as full-time students, have completed residence and all other academic requirements except the thesis. Subsequent registrations are on a part-time basis. It seems clear that departments vary widely in their acceptance of this as a principle and it is recognized that provision must be made for this type of registration. We consider, however, that it is academically preferable for students to complete all degree requirements before taking up employment, if this is at all possible. Any policy that leads to large numbers of this type of part-time students we believe to be detrimental, and a few of the geography departments should review the practices that have developed.

The second type of part-time student is confined to Master's programmes in which the student is permitted to meet all requirements for the advanced degree on a part-time basis. We were told that there is an increasing demand for this type of programme from teachers, government employees and others who find it impossible to register on a full-time basis. Some departments - and universities for that matter (e.g. York) - are organized to serve this demand and may, therefore, have large proportions of their graduate students registered for part-time only. We believe that departments would do well to develop non-thesis Master's programmes for most of these students and we were told that this is being done or is planned at some institutions.

(e) Present Enrolments and Degrees Completed

Summaries of enrolment and degree data are presented in Tables I and II. Perhaps the feature of the data on graduate students which gives us greatest concern is the apparently very slow rate of completion of Ph.D. programmes in all five of the departments offering these programmes, and of Master's programmes in many departments. The Canadian Association of Graduate Schools, in its annual statistical reports, gives productivity of programmes as the number of degrees awarded expressed as a percentage of total registrations. This is essentially the inverse of the ratio of number of registrations to degrees granted which we have considered in these assessments. We realize that the ratio of registrations to completed degrees is not a very satisfactory measure of degree completion except under conditions of steady state registration. Total registrations increased during the five-year period 1967-68 to 1971-72 but, even allowing for this, we are very much concerned with the very large numbers of registrations and the small number of degrees granted. As indicated above, we are also concerned with the large increase in part-time registrations of both Ph.D. and Master's students in some departments during this period. This inevitably delays graduation. The average length of time, as given to us by some department chairmen, for graduate students to complete Master's degrees, seems excessive even where the proportion of part-time students is low.

It is to be noted that our projections and allocations of graduate students in both Ph.D. and Master's programmes are made with the firm assumption that there will be a very substantial improvement in the completion rate of degree programmes.

(f) Projected Enrolments

The terms of reference for consultants require (among other things) that we make recommendations on (a) "desirable provincial enrolments, year by year, in the various levels of graduate study and the various subject divisions", and (b) "distribution of enrolment amongst the universities, showing desirable ranges of enrolment". We feel that there is no objective basis on which we can state with any assurance that the figures we present are to be taken literally. The following totals for registrations in Ph.D. and Master's programmes and the distribution by specialty and university should, however, be useful to those who must

Table I

Registration of Full-time and Part-time Graduate Students in Geography

1967-68 to 1971-72

University	Number of Registrations									
	1967-68		1968-69		1969-70		1970-71		1971-72	
	F.T.	P.T.	F.T.	P.T.	F.T.	P.T.	F.T.	P.T.	F.T.	P.T.
A. For Master's Programmes										
Toronto	24	12	23	15	21	9	20	9	17	3
McMaster	13	1	13	4	26	5	10	9	14	9
Western	34	12	27	18	33	23	28	27	24	30
Waterloo	12	1	9	13	18	4	23	15	29	9
Ottawa	11	6	5	8	6	7	11	5	14	4
Queen's	6	1	8	3	10	5	7	8	16	5
York	4	10	11	19	20	20	21	31	14	39
Guelph	4	0	6	1	12	0	10	2	3	2
Carleton	2	0	6	3	9	4	8	3	6	5
Windsor	0	1	3	2	3	4	6	2	10	6
Waterloo Lutheran	6	3	6	3	2	4	4	4	7	6
System Total[1]	116	47	117	89	150	87	147	116	155	125
B. For Ph.D. Programmes										
Toronto	11	6	25	2	31	4	33	5	32	8
McMaster	12	0	19	0	22	0	19	5	17	5
Western	9	7	13	8	15	13	17	17	17	18
Waterloo	0	0	3	0	3	0	5	2	7	2
Ottawa	0	1	1	1	2	1	4	1	1	3
Guelph [2]	3	0	6	0	6	0	7	0	7	0
System Total[1]	35	14	67	11	82	21	84	35	81	37

[1] System totals taken from the "Systems Total" document supplied by ACAP. There are minor discrepancies, but these do not affect general conclusions.

[2] Guelph figures are all Agrometeorological students at Ph.D. level.

Table II

Degrees Granted to Students Registered Full-time and Part-time

1967-68 to 1971-72

University	Degrees Granted									
	1967-68		1968-69		1969-70		1970-71		1971-72	
	F.T.	P.T.	F.T.	P.T.	F.T.	P.T.	F.T.	P.T.	F.T.	P.T.
A. Master's Degrees										
Toronto	5	4	16	1	9	2	11	5	10	1
McMaster	11	0	4	2	5	3	6	4	2	0
Western	12	2	1	5	7	4	5	9	2	8
Waterloo	1	0	2	0	6	1	3	0	8	0
Ottawa	2	0	1	0	0	2	1	1	3	0
Queen's	3	0	1	0	3	0	2	0	3	1
York	0	0	3	1	10	3	0	5	2	2
Guelph	1	0	1	0	2	0	2	1	1	1
Carleton	0	0	3	0	1	2	2	1	0	5
Windsor	0	0	0	0	1	0	4	0	1	0
Waterloo Lutheran	1	0	3	0	2	0	1	0	2	0
System total [1]	36	6	35	9	48	16	36	23	23	13
B. Ph. D. Degrees										
Toronto	1	2	0	3	0	0	2	2	2	1
McMaster	0	0	1	0	1	0	0	5	0	1
Western	0	0	0	0	0	1	0	1	0	0
Waterloo	0	0	0	0	0	0	0	0	0	0
Ottawa	0	0	0	0	0	1	0	0	0	0
Guelph [2]	1	0	1	0	0	0	0	0	1	0
System Total [1]	2	2	2	3	2	1	2	10	6	0

[1] System totals taken from the "System Total" document supplied by ACAP. There are some serious discrepancies, particularly in the Ph.D.s awarded in 1970-71 and 1971-72.

[2] Guelph figures are all Agrometeorological students at Ph.D. level.

do the detailed planning. These totals have been arrived at on the basis of the following considerations.

We were supplied with "Estimates of the Demand for Ph.D.s in Geography," as prepared by ACAP and dated September 14, 1972. These project a demand for 19 new Ph.D.s per annum for academic positions in Ontario. We think that these estimates may be high for the first year or so but they are probably better than any we could make independently. We have therefore accepted these as the basis for our figures. Even though they may prove to be high for a year or so we consider that the estimate will be acceptable by 1975-76. It seems to us that there is little likelihood that this number of Ph.D. degrees will be awarded in 1972-73 or 1973-74 so any error in the estimates for these years is probably not serious. Furthermore, if our recommendations on Ph.D. programmes for Queen's and York are accepted, it will take at least three years before these new programmes produce graduates.

We are of the opinion that a few positions for geography Ph.D. graduates should open up in non-university academic institutions and in government, research and consulting fields. This opinion is supported by the employment statistics supplied to us for the years 1967-68 to 1971-72. One of the 30 Ph.D. graduates and 15 of the 45 ABDs found employment in Ontario in non-university positions. We have therefore added <u>five positions</u> annually to the number estimated by ACAP to be needed for academic positions in Ontario.

We have not produced year-by-year figures because, even if all our recommendations are accepted, the full effect could not be reached before 1975-76 or even later.

If enrolments in Ph.D. programmes in the province are to be related to the estimated employment opportunities, a ratio between enrolments and number of completed degrees must be established. We have projected a 5:1 ratio, which is very much lower than is operative at the present time. We have already stated that we consider the recent rates of completion of Ph.D. programmes to be unsatisfactorily slow. We recognize that, as enrolment totals increase, the ratio will be higher than the proposed 5:1, but this ratio should be reasonable when enrolment reaches an essentially steady state. Other factors that will affect the number of completed degrees will include: (i) the proportion of students who enter Ph.D.

programmes with Master's degrees already completed; (ii) the number of drop-outs; (iii) the proportion of part-time students; (iv) the effect of time spent in field work in foreign areas. An increase in the first of these should increase the number graduating in a given time, while increases in the other three will decrease the number. Drop-outs constituted about 7% of enrolments during the five-year period under review. If field work is carried out in foreign areas the time to complete the Ph.D. may take up to an additional year and a half, especially if the student must work in a foreign language. It also extends the period during which the student must receive financial support.

Our assumptions lead to a proposed enrolment of 120 students in Ph.D. programmes in the geography departments of the Ontario system in those specialties which come under our assessment. The Agrometeorology programme at Guelph is dealt with separately in the allocations.

The task of estimating desirable numbers for enrolment of Master's graduates per annum is even more difficult than for Ph.D.s and we have no reliable basis for suggesting significant changes from the present ratio of Master's and Ph.D. candidates for the system. Some departments told us that "most" or "many" of their Master's students were teachers who wished to upgrade their academic credentials. Some told us that local or neighbouring municipalities or consultants hired their graduates for planning activities. These two outlets for Master's graduates are expected to remain substantial, but it is quite unrealistic for us to predict specific figures. The ratio of registrations for Master's programmes to registrations for Ph.D. programmes during the past five years was roughly 2.4:1. We have assumed that such a ratio may have some justification and we have therefore used an approximately 2.5:1 ratio in our calculations for the system total. If it is judged that this conclusion is in error, then suitable adjustments can be made in planning. We do not suggest, however, that each department aim at a 2.5:1 ratio, as will be clear in the proposed allocations.

Most of the data available to us deal largely with Ontario figures. There are many factors affecting the number of geography graduates from non-Ontario universities who will seek employment in the province, but we have no figures on this. The system total data supplied to us show that 42 of 75 new Ph.D.s or ABDs found immediate employment in Ontario,

and 31 found immediate employment elsewhere (the situation of two Ph.D. graduates was unknown). It seems reasonable to us to assume that movement of geographers, who graduated elsewhere, into Ontario should be roughly balanced by Ontario graduates who find employment outside Ontario. We have examined the immigration status of graduate students registered in geography in Ontario in 1970-71 and 1971-72 and conclude that students on student visas contribute a negligible portion of total registrations and degrees awarded. Landed immigrants make up an appreciable number of both Ph.D. and Master's students and they must be considered as just as likely to remain in Canada as are Canadian citizens.

(g) University Setting

Finally, we recognize great differences in background, nature, development, and maturity of the different Ontario universities. These differences have some profound effects on the philosophy of geography departments with respect to graduate work. In those universities where graduate education has been part of the operation for many years, this fact has clearly influenced the approach to graduate work in geography, even though the geography department may have been established comparatively recently. In some of the newer institutions which have grown very rapidly, however, there has not yet developed the same institutional tradition for quality control. This does not imply that geography departments in these newer universities are not controlling quality, but it does mean that we see a much greater need for internal control than in a department operating in a well established institution. We feel that this may not have been considered seriously enough in some of the geography departments. Factors that may be involved in these controls include selection of graduate students, development of programmes for graduate degrees, supervision of individual students, thesis projects, criteria for graduate faculty membership, etc.

In general, however, the programme requirements and administrative procedures, as stated in calendars and in outlines provided to students, compare favourably with those in use in other major universities in Canada. We conclude that there are significant differences among departments, in the interpretation of some of the requirements for admission and programmes and that the stronger departments usually apply more stringent interpretations. It is our impression that the academic

abilities of graduate students admitted to the strongest departments are clearly higher than are those of the students admitted to other departments. This is not at all surprising but it emphasizes the necessity for strict quality control in the latter departments.

We were repeatedly told by graduate students that they chose to register at a particular university because of its reputation or because a particular faculty member was located there. These are, of course, the most justifiable reasons for selection. On the other hand, other students told us they chose a particular department because it offered the most financial assistance or because it was conveniently located. Many of the best students had been admitted by several reputable departments and therefore had had the opportunity to make meaningful choices. A few students said they chose a particular institution "because they were accepted". A few told us that they had not chosen the strongest departments for a variety of reasons: e.g. 1. "wanted to avoid a pressure department"; 2. "wanted to work in a small department with more personal direction".

There will continue to be a certain amount of inter-university competition for graduate students and some departments with limited graduate facilities seem unrealistic in their expectations for attracting graduates of other institutions. Competition for students among departments should not be primarily on the basis of remuneration and while satisfactory alternatives may pose difficult financial problems, fully qualified students should be assured of adequate financial assistance to have a free choice. Awards to such students should be made on the basis of the total system, or departments must have adequate resources to insure that the choice of department largely on the basis of the dollars offered is minimized.

Financial assistance for field work should be considered as an essential part of the research needs of geography students. Costs of such work include travel and maintenance expenses and these should be accepted, just as expensive equipment is accepted in physics or chemistry, as part of the research costs.

3. PROPOSED ALLOCATIONS BY SPECIALTIES AND UNIVERSITIES

The proposed enrolments in the various specialties at each of the Ontario universities included in this assessment are presented in Tables III and IV and are to be considered as general guides in planning.

We have not used numbers for each specialty at each university but rather have suggested only specialty totals for the Ontario system. Obviously we could have entered numbers to show a range instead of using "primary" and "secondary" emphasis for Ph.D. enrolments, and "+" for Master's enrolments. We do not think such numbers could be defended and we believe that, within reason, each department should have discretion as to how it uses the total recommended enrolment. We do not think, for example, that Windsor should feel obligated to offer programmes in the five specialties for which "+" has been entered in the table. There should, however, be system planning so that each institution does not elect entirely independently to concentrate on specialties that are already rather adequately served in the system.

The recommended totals for Universities are, however, made firmly, although modest variations from the suggested figures are to be expected. The reasons for this are, we believe, justified in the discussion of individual departments which follows in the report.

In the recommendations for university totals no distinction has been made between full-time and part-time registrations. Our preference for full-time programmes was clearly stated in earlier sections of the report. We recognize, however, that York and Ottawa, and possibly Carleton, will probably have an appreciable number of part-time Master's students for whom programmes and procedures have been specifically designed, and the recommended numbers make some allowance for this. It is our conviction that a department with definite restrictions on total numbers will be much less likely to permit the numbers of part-time students to become too high - as we believe they have in some departments.

It should not be expected that the proposed numbers will be reached immediately - in fact we have suggested earlier that it will probably be 1975-76 before the proposed distribution can be realized. We wish to emphasize that any attempt to attain the proposed figures by relaxation of admission standards would be disastrous to the future of

TABLE III

Ph. D. Programmes

Present and Proposed Registrations for Geography Specialties and for Universities

P = Primary emphasis S = Secondary emphasis

University	Geographical Specialty										System Total	
	Climatology		Urban Econ.		Res.Anal.		Cult. Hist.		Other [1]			
	71-72	Prop.	71-72	Prop.	71-72	Prop.	71-72	Prop.	71-72	Prop	71-72	Prop.
Toronto	2	S	17	P	11	P	7	S	3	S	40	45
McMaster	5	P	13	P	2	-	7	S	2	-	22	25
Western	0	-	6	S	6	P	11	-	8	-	31	10
Waterloo	0	-	4	S	3	P	0	-	3	S	10	10
Ottawa	0	-	2	P	1	P	1	-	2	-	6	10
Queen's	0	-	0	P	-	-	0	S	0	-	0	10
York	0	-	0	S	-	S	0	P	0	-	0	10
System Total	7	12	35	50	23	30	26	20	18	8	109	120
Guelph [2]	7	P	-	-	-	-	-	-	-	-	7	8

[1] "Other" includes Biogeography, Cartography and Hydrology. For "Regional" see the text.

[2] The Guelph Ph.D. work is, and should be, exclusively in the field of agrometeorology in the Department of Land Resource Science.

Master's Programmes

Present Registration and Proposed System Totals for Geography Specialties and Proposed Totals for Universities

\+ Competent to offer programmes - Should not offer programmes

versity	Geography Specialty																University Totals	
	Biogeog.		Cartog.[1]		Climatology		Hydrology		Urban-Econ.		Res. Anal.		Cult. Hist.		Regional			
	71-72	Prop.	71-72	Prop.	71-72	Prop.	71-72	Prop.	71-72	Prop.	71-72	Prop.	71-72	Prop.	71-72	Prop.[2]	71-72	Recommended
onto	0	+	0	-	2	+	0	+	6	+	9	+	63	+	0	-	20	45
aster	0	-	1	+	5	+	0	+	12	+	3	+	5	+	3	-	29	25
tern	0	-	0	-	1	-	0	+	18	+	19	+	8	+	5	-	51	50
erloo	0	+	0	+	1	+	0	-	23	+	14	+	0	-	0	-	38	35
awa	0	+	0	-	0	-	0	-	11	+	1	+	2	+	4	-	18	30
en's	0	-	2	+	0	+	1	+	12	+	0	-	6	+	0	-	21	20
k	1	+	0	-	0	+	0	+	38	+	2	+	12	+	0	-	53	50
lph[3]	0	-	0	-	2	+	0	-	2	+	1	+	3	+	2	-	10	15
leton	0	-	0	-	0	-	2	+	1	+	5	+	3	+	0	-	11	25
dsor	0	-	0	-	2	+	0	+	10	+	3	+	1	+	0	-	16	20
erloo heran[4]	No detailed breakdown supplied																(13)	?
ck										+[5]								?
nt												+[6]						?
tem al[7]	1	5	3	5	13	20	3	5	133	150	57	65	43	65	14	-	267+13	315+

es:

1 Cartography includes remote sensing. We foresee future cooperative work between Carleton and Ottawa, and Guelph and Waterloo.

2 See text for the explanation on "Regional" and the reason for not allocating registrations.

3 Climatology at Guelph in the Department of Land Resource Science.

4 Waterloo Lutheran did not supply a breakdown of specialties, so none have been designated as "competent to offer programme". We recommend that the Waterloo Lutheran programme be appraised and, if approved, decisions on specialties be made at that time.

5 The Brock proposal should be appraised, but it is our opinion that at least one additional appointment should be made in t is specialty before the programme is started.

6 The recommendation is for the cooperative water programme with the Department of Biology.

7 These system totals for specialties are <u>not</u> to be taken as precise recommendations.

graduate work in geography in the province. Rather, we see a need for considerable tightening up of admission requirements in some departments. It is our view that the present level of quality of some of the graduate students in the province is less than desirable and below what we believe to be attainable standards. No attempt has been made to present desirable enrolments for the period 1978-1983. There should be continuous study of trends in applications for admission and in employment opportunities so that realistic decisions on the most desirable enrolments during that period can be made. It is our belief that this can best be done by the Discipline Group or a similar body.

The following two sections of the report provide the rationale for the recommendations on allocations.

4. FIELDS OF SPECIALIZATION

(a) General

Once again we draw attention to the dissatisfaction expressed by some departments with the ACAP categories for geography specializations, and our conclusion that we must base our discussion on this classification. We hope that the following discussion will clarify our position in most areas of disagreement.

(b) Smaller Fields (Ph.D. 8, Master's 15)

(i) Biogeography

At present Biogeography is a rather neglected field in Ontario. We recommend a total student population of five, distributed as may be suitable among four departments (Toronto, Waterloo, Ottawa and York) to work toward Master's degrees. The advance to the offering of Ph.D. programmes anywhere should await the appointment of senior staff members of distinction in the field. Since every department except that at Queen's seems to be involved in what is here called "Resource Analysis", those departments without graduate courses, or resident expertise in Biogeography, should attempt to provide this either through hiring or through use of resources in the biological sciences in their own universities.

(ii) Cartography and Remote Sensing

We have proposed a very modest program of five students a year to be trained specifically at the Master's level in either or both of

Cartography and Remote Sensing. At present we feel that McMaster has some capacity in both, Waterloo especially in Remote Sensing, and Queen's especially in Cartography. Conceivably one of these universities, perhaps Waterloo, might consider more expertise in computer graphics and information systems in future hiring. Carleton and Ottawa might work out a joint comprehensive programme including Remote Sensing to provide a type of training of much importance in government research operations. The lack of active graduate programmes in either subfield in the Toronto area for even the Master's degree seemed surprising to us, particularly since both major Toronto universities have excellent technical facilities.

(iii) Hydrology

Hydrology is, as a rule, very closely associated with one or another of Geomorphology, Climatology, or Soils Geography. Usually it has not been offered as a degree field in itself, but in looking over the resources of the province we believe a Master's degree could be offered at any of Carleton, McMaster, Queen's, Western, Windsor and York (and, possibly, ultimately at Trent). At the moment we are suggesting a total student population of only five for the province. We foresee that the function of hydrological expertise is most likely to be supportive of Geomorphology, Climatology, Biogeography and Resource Analysis.

(c) Climatology (Ph.D. 12,* Master's 20)

Since we are not assessing Geomorphology, the chief biophysical field within our purview is Climatology. As a major undergraduate teaching field some competence in Climatology is widespread. We identify the potentiality for three Ph.D. programmes (Guelph, McMaster, and Toronto), although for the present it is suggested that any Ph.D. work at Toronto should be undertaken in close cooperation with Guelph or McMaster. The Climatology at Guelph, really agrometeorology and very "micro" in emphasis, is rather radically divorced from the work of the geography department as such. We believe it to be of very high quality but we suggest more efforts to integrate it with physical geography in the department or with Climatology elsewhere in the province. McMaster is distinctly in the lead in producing geographically biased climatologists and has excellent personnel and equipment for the purpose. We believe Master's degrees can be

* Excluding the agrometeorology programme at Guelph.

encouraged not only at the above three universities but also at Waterloo, Windsor and York. In the case of Waterloo and York we urge cooperation with one or more of Toronto, McMaster, or Guelph.

(d) Cultural-Historical (Ph.D. 20, Master's 65)

Under the Cultural-Historical heading we have found our third largest grouping of interests in terms of staff and numbers of students, well behind Urban-Economic in emphasis, but quite comparable with Resource Analysis. Most of the few humanistic interests of the geographers of the province are engrossed here. Bibliographies include some of the best scholarly work listed. Because this rubric is often more integrative in its implications than Urban-Economic or Resource Analysis, a good deal of what might otherwise be called "Regional" is here included. It encompasses the many geographical interests fringing on prehistory, anthropology and history and a substantial number of those bordering on political science and sociology. Major sub-emphases might be called "historiographic", "cultural-ecologic" and "political" but there are minor ones as well. In all it is widely represented in the province but its strength is rather more concentrated locationally than are those of the other two major "human" subdivisions. For "historical" work York is clearly in the lead with several scholars of international repute. It is moving strongly into the cultural-ecological emphases with two active young scholars and it is also making promising beginnings in historical urban work and in several kinds of historical socioeconomic studies with more or less emphasis on quantitative or behavioural methodology.

Toronto, despite losses which have impaired its relative standing and effectiveness, still has much strength and, not only is it committed to another appointment in this field, but it also has some unused capacity on its outlying campuses. There are, too, some promising intra-departmental lines of cooperation with the strong Urban-Economic field. The two other departments for which we recommend doctoral work at present are Queen's and McMaster. In each case we assume both cooperation with other universities and, in the case of Queen's, an addition to staff and, in the case of McMaster, maintenance of present equivalent strength.

The effective exploitation of the immense and still largely unused resources of the national archives for research on the historical geography of Canada requires a good Ph.D. program in eastern Ontario in

our view. We urge close cooperation to this end between Queen's, which has an excellent university context for the purpose, and Carleton, which is on the spot and has good staffing in Cultural-Historical. For the immediate future, Ph.D. degrees should be awarded by Queen's. Again, rather more "cultural" strength to exploit human and library resources, and government interest in Canada's native peoples, would be useful at Ottawa, Carleton, or both. For McMaster we urge close cooperation with the strengths at York and Toronto and, for work on Ontario's rural past in particular, with Guelph.

For Master's programmes, in addition to those at McMaster, Queen's, Toronto and York, we see major strength at Carleton and effective programmes at Guelph, Western and Windsor.

(e) Urban-Economic (Ph.D. 50, Master's 150)

Work in Urban-Economic geography is strong in Ontario. Evidence of increasing non-academic demand for geographers in this category at both the Master's and Ph.D. levels prompts us to suggest an allocation of approximately 50 Ph.D. students to this field, as compared with the present 35 (40% as compared with 30%).

Ph.D. level Urban-Economic work is recommended at all seven universities. We feel, however, that there is some danger of over-concentration of effort in this field in view of the large number of younger faculty already working in it. We sought, therefore, to attain greater breadth of topical coverage by recommending primary concentrations on Resource Analysis or Cultural-Historical where warranted, even though Urban-Economic work was strong.

Toronto and McMaster are among the leading universities in North America in Urban-Economic geography. Work at Toronto is particularly strong in general urban study, urban transportation, regional economic development and theoretical spatial analysis. At McMaster, there is emphasis on urban economic study, theoretical spatial analysis, and regional economic development. Urban-Economic work is also well developed at Ottawa, Waterloo and Western Ontario where the Ph.D. is currently granted, as well as at Queen's and York where we are recommending Ph.D. work. Applied work in Urban-Economic geography is emphasized at Ottawa and Waterloo. Bilingual training and accessibility to government agencies strengthen the

applied work at Ottawa; close linkages with regional and urban planning strengthen the applied work at Waterloo. At both Queen's and York there is work in general urban, urban-behavioural, and regional economic development.

Master's level study in Urban-Economic geography is widespread. We feel that such work could be offered at Carleton, Guelph and Windsor, as well as at the seven Ph.D.-granting institutions. For the most part, stress would be placed on applied work in view of possible positions in local urban planning agencies. Since the present enrolment is already 143, slightly over 50% of the total Master's enrolment, our recommendation of 150 students does not represent a significant change in number of Master's level students specializing in Urban-Economic geography.

(f) Resource Analysis (Ph.D. 30, Master's 65)

As indicated earlier, we have used Resource Analysis as a unifying category. We attempted to include the study of environmental utilization and impact, which would encompass work in recreation, pollution, water management, terrain sensitivity, and environmental hazards. Since there are also significant non-academic opportunities associated with Resource Analysis, it is recommended that there be 30 students in this field, as compared to the present 23, an increase from 20% to 25% of the total.

Not all of the Ontario universities show Ph.D. level strength in Resource Analysis. Western Ontario and Toronto have particularly strong programmes, and there are well developed programmes at Ottawa and Waterloo, while York now offers a sound Master's programme and could offer a Ph.D. programme.

Recreational geography is a particularly well developed subfield. Research in recreation is being carried on at Western Ontario, Waterloo and York. The study of environmental hazards, on the other hand, is concentrated at Toronto. In several departments the Resource Analysis work derives significant strength from the work of the biophysical geographers. At Ottawa there is work in terrain sensitivity and several projects involving both biophysical and human geographers. At Western Ontario, work in recreation, water management and coastline study involves expertise from both biophysical and human geography. A significant strength at Waterloo is the close organizational tie between Geography and Planning.

Master's level work is also recommended at McMaster, Carleton, Guelph, and Windsor. In addition, the proposed interdisciplinary program in Water Resources at Trent has considerable promise. We are recommending that the number of Master's candidates in Resource Analysis be increased from 57 to 65, which would keep the percentage at approximately the present 20%.

(g) Regional

Although we did not use the Regional category in our allocation, we subscribe firmly to the view that geographers must continue to cover regional interests. Ontario geographers have played a significant role in interdisciplinary area study programmes, and this should be encouraged and strengthened. Faculty expertise in Africa, Asia or Latin America, for example, permits students with a variety of topical specializations to apply different concepts and models to such areas as well as to Canada or the local area. In general, regions provide the vital contextual framework for all topical studies in geography; e.g., we see the need for a rather explicit regional context in most Cultural-Historical study. For the future, we see a difficult and sophisticated type of integrative regional analysis (possibly a combined disciplinary effort) as developing at the doctoral level. We feel, however, that geographers are not yet ready, even at the doctoral level, for regional study without a clear topical focus. In particular, we do not see it as appropriate at the Master's level. Our proposed Ph.D. allocation, however, should be interpreted as including regional specialists distributed among the other categories.

(h) Neglected Fields

Perhaps of most overt concern to us is the degree to which regional interest in areas outside the United States and Canada seemed to be neglected. We think that some Master's and much Ph.D. topical interest could be pursued in a wide variety of overseas areas and that, in their hiring policies, departments might seek rather more of this sort of expertise. We were surprised and a little alarmed that training in Biogeography is not being more widely provided just at a time when popular interest in ecological aspects of man-land relationships, traditionally of central geographical concern, is at its peak. We had expected more interest and

demand in the field of political geography than seems to be evident. Finally we perceive a demand for geographically sophisticated cartographers and remote-sensers that can be met only by more training at the Master's and, to a much lesser extent, the Ph.D. levels. The federal government alone offers major employment opportunities for graduates from such programmes.

5. GEOGRAPHY DEPARTMENTS IN ONTARIO UNIVERSITIES

(a) General

The recommendations for allocation of graduate students by university require additional explanation. Each department was required to put forward projections covering the period up to 1976-77. It is clear from these projections that several departments offering both Ph.D. and Master's programmes wish to keep the numbers of Master's students comparatively low. We consider this reasonable and have generally accepted the projections put forward by such departments. We have not, however, accepted the very high number projected by York.

We believe that, except under special circumstances, a department should have at least ten graduate students if it is to offer graduate programmes. Such special circumstances will probably be found, for example, in a department just starting a graduate programme in one specialty, and in this situation it will be necessary to accept a smaller number as being satisfactory. Graduate students at several institutions told us that there were not enough of them to permit good exchange of ideas. The value of such exchange can scarcely be overestimated, especially at the Ph.D. level.

The following brief comments on each university reflect those features of the geography departments deemed pertinent to the recommended allocations as well as those departmental programmes which seem particularly susceptible of further development in cooperation with other universities.

(b) University of Toronto (Ph.D. 45, Master's 45)

That the Toronto department has the greatest across-the-board strength is not surprising. It is the oldest Anglophone geography department in Canada (now in its 38th year) and is in the largest and strongest

provincial university. Supportive elements within the university, e.g. in libraries, special laboratories, and closely related academic departments, are particularly notable. Although especially strong in Urban-Economic, in which its reputation is international, it is capable of undertaking doctoral work in all other major subfields we have described. In Resource Analysis its work on environmental hazards is particularly outstanding. Its major strength within Cultural-Historical at the moment is probably in historical urban, meshing nicely with the Urban-Economic strength. For many other Cultural-Historical interests the department should enter into close and fully operational cooperative associations with York. Between them the two departments can offer unusually strong and varied Cultural-Historical graduate programs. Similarly, in Climatology, the strongest possible liaison with McMaster should be developed and maintained.

The department has been involved in many intra- and inter-university cooperative ventures, which we strongly approve, notably The Centre for Urban and Community Studies and The Institute of Environmental Sciences and Engineering (within the university) and in the joint programme with York in transportation. Less formally there are many instances of internal interaction with cross-appointments and cross-listing of courses between departments, and some external interaction, particularly with York and McMaster, in external appointments to dissertation committees, informal joint seminars in particular specialties, and the like. We think such activities should be increased, strengthened and formalized.

The department has rather underemphasized its Master's programme and we are suggesting a slight increase above its projections in its student population at that level. We recommend all fields except Cartography-Remote Sensing. In staffing we recommend an immediate appointment in Cultural-Historical (as planned), a temporary replacement in Climatology, rethinking of its responsibilities in Cartography, Remote Sensing and Biogeography, and the activation of unused resources at the two suburban campuses. We feel that, by 1975-76 at least, if not before, several of the subfields could be strengthened by the use of specialists now resident at Erindale or Scarborough Colleges, perhaps by some trade-offs of teaching at those campuses by some of the present St. George campus staff.

(c) McMaster University (Ph.D. 25, Master's 25)

The McMaster department is quite strong in several fields, and it is in a university structure strongly supportive of graduate education and faculty research.

Physical geography and Urban-Economic geography are the two major fields in which McMaster offers Ph.D. work of outstanding quality. The Solid Earth Science component of Physical geography is being covered in a separate assessment. For purposes of this assessment, we are recommending primary concentration on Climatology and Urban-Economic geography at the doctoral level. Within Urban-Economic, the strongest subfields at present are theoretical spatial analysis, urban-economic geography, and regional economic development. A secondary Ph.D. concentration is recommended in Cultural-Historical geography, where historical and political geography are promising. At the Master's level, work in Remote Sensing, Hydrology and Resource Analysis are suggested in addition to the Ph.D. fields. Foreign area expertise in Latin America is particularly strong.

Inter-university cooperation has been developing in several fields. In Climatology, there has been cooperation with the Agrometeorology group at Guelph involving faculty and equipment. In Urban-Economic, initial efforts are being carried on with Toronto with an informal joint seminar. McMaster has been active in the development of the Ontario Cooperative Programme in Latin America and Caribbean Studies. In Remote Sensing, an inter-university graduate course (Integrated Aerial Surveys) is operative with Waterloo, Guelph and Toronto. All of these efforts should be encouraged and further developed, and, where appropriate, joint graduate faculty appointments considered.

(d) University of Western Ontario (Ph.D. 10, Master's 50)

The University of Western Ontario has one of the longest established departments of geography and the distinguished university has excellent library and other supporting facilities. As in several other provincial departments there have been large recent staff increments. Perhaps more than any other major department it has had a long history of concentration on Undergraduate Honours and Master's programmes, particularly in the preparation of candidates for secondary school teaching and government planning and research. In these vital tasks it has performed

excellent service for the province. In the Ph.D. programme the rate of completion of degrees has been distressingly slow and we feel that the department has overextended itself.

As with the York department, Western chose its own subdivisional rubrics. They did help us to understand the department and its hopes for the future a little better but, as with York, we had to sort people and specializations back into the Discipline Group's rubrics for comparative purposes. At present we perceive two fields of emphasis for doctoral study - Resource Analysis, with a major concentration on recreational resources, and Urban-Economic. Because of the particular local strengths in the former, and the very substantial strength in the latter elsewhere in the province, we have recommended that the emphases be, respectively primary and secondary. The opportunities for cooperation with Waterloo in the study of Resource Analysis are particularly promising. We were pleased with the kinds and degrees of regional expertise we found in the staff.

In a department of this size we would hope that the designation of graduate faculty could be more selective and that there might be regular opportunities for new staffing which would allow more diversification into the minor fields, and strengthening here and there in the major ones. While the present process of departmental adjustment continues we recommend a reduction in the population of students in Ph.D. programmes to ten as rapidly as possible, and no later than 1975-76. However, we are convinced that at that level it should remain on a par with Ottawa, Queen's, Waterloo and York. At the Master's level we recommend one of the two largest student populations in the province. In that programme we urge that attention be concentrated in the three major categories, adding Cultural-Historical, and again that efforts be made to shorten the time between entry to the programme and earning of the degree.

(e) University of Waterloo (Ph.D. 10, Master's 35)

The University of Waterloo has been established for a relatively short time and has had strong stress on engineering. In this context, the general departmental emphasis on applied work seems appropriate. This emphasis is noticeable in the three fields of concentration which we suggest: primary concentration in Resource Analysis; secondary concentration in

Urban-Economic; and another possible secondary concentration in Remote Sensing and related fields.

Work in Resource Analysis is facilitated by the placement of the department in the Division of Environmental Sciences. Ties with Planning and other units in the Division are well developed and operationally effective, but better linkages are needed with some of the basic social science departments such as economics and psychology. Work in recreation and water management appears promising. The applied emphasis in both Resource Analysis and Urban-Economic geography is reinforced by cross appointments with the School of Urban and Regional Planning. Remote Sensing is a strong field at Waterloo and we suggest that it could be significantly strengthened if a programme in computer cartographics were to be developed. We believe that such a programme is needed in the province, and Waterloo would be a logical location in view of its strength in engineering, emphasis on applied work, and existing Remote Sensing programme. Master's programmes seem feasible in nearly all fields with the exceptions of Hydrology and Cultural-Historical.

Waterloo has played an important role in the development of GIRMS (Geography Inter-university Resource Management Seminar) and this should continue to be encouraged. In addition, more advantage should be taken of the strong Resource Analysis programme developing at Western Ontario with joint graduate faculty appointments and seminars.

At the Master's level, cooperation with Guelph would be helpful in Climatology, Urban-Economic and rural geography. As graduate specialties develop at Waterloo Lutheran, more explicit cooperative ventures should be explored.

(f) University of Ottawa (Ph.D. 10, Master's 30)

The University of Ottawa has made its role as Ontario's only major bilingual university fully operative. We see this as a key factor in its development of graduate work at both the Ph.D. and Master's levels. Nevertheless, duplication of offerings is expensive and, together with acute problems of building space, parking, and the like, this commitment has placed an unusual strain on the department. In addition, it has gone through a very substantial reorganization in recent years and is just beginning to settle down. Despite these difficulties we see good capability

for Ph.D. and Master's programmes in two fields: Resource Analysis and Urban-Economic. For the first graduate degree we would add some very selective study in Biogeography and Cultural-Historical. In the latter the department should work in the closest possible collaboration with Carleton. We see similar cooperation as being highly desirable in our recommendation for the development of a comprehensive programme for graduate education in the national capital for Cartography, Remote Sensing, computer graphics and information systems. Moreover, each department would gain from a sharing of regional expertise.

Although the present chairmen of the two departments in the capital and many of their staff members appear anxious to cooperate, there seems to us to have been a great deal of foot-dragging by students, faculty and administrative personnel in both universities on the nuts-and-bolts question of making inter-university cooperation work. We suggest that cross appointments to graduate faculties (where the credentials are clear-cut), as well as allowing students generous credit for work taken at the other university, would be important moves.

Finally, at Ottawa, we were much encouraged to note the degree of integration between the members of different disciplinary subfields. We think no other provincial department has put more effort into implementing the conception of geography as a single coordinate discipline.

(g) Queen's University (Ph.D. 10, Master's 20)

We recommend approval of the proposed Ph.D. programme at Queen's. The department has considerable strength in Urban-Economic geography and the university provides an excellent supportive structure.

At the Ph.D. level we recommend primary concentration on Urban-Economic geography. Both general and behavioural urban geography are well represented at Queen's and there is promising allied work in social and medical geography. In addition, regional economic development shows promise. There are potentially good linkages with the Department of Economics and an interdisciplinary programme in urban and regional planning. In Cultural-Historical geography, a secondary concentration is recommended. Regional work on Africa is also possible in either of the two categories. At the Master's level we believe that programmes in Cartography, Climatology and Hydrology are feasible with supportive work in soils geography.

It is important to note that, in both Urban-Economic and Cultural-Historical, major appointments should be made as is currently planned by the university. An active research man is needed in each of urban work and historical geography. Although we recognize that cooperative arrangements with other universities are particularly difficult for Queen's, an arrangement whereby the historical geographers may make easier use of the National Library and Archives in Ottawa and cooperate effectively with the historical geographers at Carleton is badly needed. Possibilities of joint graduate faculty appointments should be explored as a start to such cooperation.

(h) York University (Ph.D. 10, Master's 50)

In its short history York University has had remarkable success in assembling a large staff in geography with a broad range in fields of competence. A rather large proportion are young scholars; many of these have much promise although their most productive years lie ahead. Clearly there is still a good deal of shaking down and sorting out to be done, and we could wish for more selectivity in the designation of graduate faculty to guide advanced research, but we have no hesitation in recommending immediate implementation of the embargoed Ph.D. programme in all three of the major "human" fields. The department's greatest demonstrated scholarly strength is in Cultural-Historical, as was both explicit and implicit in many of its own self-analytical statements, but there is more than adequate support for Urban-Economic and Resource Analysis as well. The department has varying perceptions of its own subfield strengths and clusters but in using the designations chosen by the Discipline Group we think our recommendations will be clear.

We urge the closest possible cooperation, in every feasible way, with the University of Toronto, in all three of these major geographical subfields. In view of York's outstanding Cultural-Historical strength there could be a significant quid pro quo from the subfields in which we found that Toronto had the greatest distinction. We also urge the same kind of cooperation with McMaster, especially in Urban-Economic, and with Waterloo in Resource Analysis and Remote Sensing. Should a major permanent appointment in Biogeography be made, this could be a fourth clear Ph.D. field for York. York has adequate across-the-board strength for a comprehensive Master's programme, except in Remote Sensing. We are recommending

for the department one of the two largest student populations in the province for the first graduate degree. To some extent, this recognizes York's dedication to meeting the needs of students who must do all of their Master's work on a part-time basis. There is, clearly, a very large demand in the Toronto area for part-time, evening study for the Master's degree, and York is well geared to provide it. Much of this part of the graduate work may be terminal and there may have to be some rethinking of programmes for the different purposes for which Master's degrees are sought. Finally, some special attention to the training programme for Cartography and Remote Sensing is suggested, perhaps in cooperation with Waterloo.

(i) University of Guelph (Ph.D. 8*, Master's 15)

The reputation and resources of the old Ontario Agricultural College provide a firm context at Guelph for a department specializing in the geographical study of rural problems (agriculture, settlement, recreation and the like). The Centre for Resources Development within the university is clearly a substantial asset. The Climatology programme is not at all closely associated with even the biophysical side of the department and, without its record, the scholarly accomplishments of the department are modest, but it intends only an unpretentious and limited course of study for the Master's degree and we think it can handle that quite effectively.

At present the strongest subfield is clearly Cultural-Historical with an emphasis on rural Ontario. For that, its large and unique library resources of nineteenth and early twentieth century materials, a legacy of its O.A.C. origins, are most useful. There are, however, opportunities for Master's level studies in limited subdivisions of Resource Analysis and Urban-Economic as well. Whatever use can be made of the unusually strong resources of Waterloo in the first, and of McMaster in the second, should certainly be done. There can be a fairly active two-way flow in its relations with Waterloo, notably in Remote Sensing. We understand that the Climatologists at McMaster and elsewhere have made good use of the expertise and equipment of the agrometeorologists.

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* Ph.D. in Agrometeorology only.

The Agrometeorological programme in the Department of Land Resources is of excellent quality. We believe it to be unique in Canada and it should be maintained. Both Ph.D. and Master's programmes are offered but emphasis has been on the former. We recommend a total of eight Ph.D. enrolments in this programme. Provision for Master's students is included in the system total for climatology.

(j) Carleton University (Master's 25)

Carleton shares with the University of Ottawa all of the great supportive strengths associated with its location in the national capital. The university itself features strong internal interdisciplinary ties, which affect human geography particularly, through the regional programmes of the Institutes of Canadian Studies and of Soviet and East European Studies, the School of International Affairs, and the ad hoc University Committees on African and Asian Studies. There are, too, close links with other disciplines concerned with the study of higher latitude regions which also involve some of the biophysical components of the staff.

As in several other departments (although we have noted a happy exception at the University of Ottawa) there is relatively little interaction within the department between the physical side, with its marked "geotechnical" emphasis, and the human side, except in the person of the present chairman. There was little explicitly biophysical input into the Master's programmes in the principal fields we were assessing and the limited hydrological and climatological interests are very closely tied to the geomorphological and pedological strengths which are being assessed by the S.E.S. ACAP panel. The lack of internal cohesion became particularly evident as we interviewed graduate students, but we feel that in the field of Resource Analysis in particular, many operational linkages are possible.

We judge that Carleton has the potential in staff and facilities to more than double its present student population studying for the Master's degree; this explicitly recognizes the substantial local demand for part-time Master's level graduate education. Distribution among subfields should reflect its present major strengths in Cultural-Historical and Resource Analysis. A minor emphasis in Urban-Economic could be strengthened by closer cooperation with the University of Ottawa. Studies in Climatology and Hydrology are less likely as specializations in themselves than

as supportive of work in Geomorphology or Soils Geography or, we would hope, in Resource Analysis.

We have urged above that departmental strength and interest in Cultural-Historical should be involved in some fully operative coordination with the department at Queen's, in particular, to exploit the extensive library resources and scholarly expertise represented, for example, in the Public Archives of Canada, The National Museum, and in the several government branches and bureaus concerned with Canada's native peoples. Although the Ph.D. would be offered only by Ottawa or Queen's we would hope that there could be cross appointments to graduate faculties, representation on thesis and dissertation advisory committees, and the like. We would not wish to see the department's present foreign area regional expertise diminished. Finally, we urge much stronger efforts to make cooperation with the University of Ottawa really work. Particularly, we are hopeful that between he two universities more graduate education in the various phases of Cartography and Remote Sensing can be made available in the national capital.

(k) University of Windsor (Master's 20)

We recommend a modest expansion of the Master's programme at Windsor. In large part, graduates of this programme will meet local needs for teachers and planners. Master's work seems feasible in Climatology, Hydrology, Urban-Economic Geography, Resource Analysis, and Cultural-Historical Geography. Windsor can offer a good terminal Master's degree either of a generalized or an applied nature. Applied work is particularly well developed in Urban-Economic. At present, the strongest preparatory work for a Ph.D. elsewhere appears to be in Climatology and historical geography. Cooperation with Ph.D. and Master's programmes at Western in Resource Analysis and Urban-Economic should be encouraged.

(l) Brock University

The Department of Geography at Brock is planning to propose a joint Geography-Urban Studies programme leading to an M.A. Many of the faculty interviewed, however, felt that a major new appointment with a strong record in urban research was needed before a graduate programme is appraised. We agree, and feel that another prerequisite to such a programme should be the demonstration by the younger faculty members that

they have realized what appears to be high research potential. There does not appear to be a pressing need in the province generally for more training in Urban-Economic geography, which is already the largest field at both Ph.D. and Master's levels. It is possible that local area planning needs are strong, however, and any proposal should include a careful survey of local employment opportunities.

(m) Trent University

The Trent department is preparing a proposal for an interdisciplinary Water Resources Master's programme in cooperation primarily with Biology. The programme appears to be feasible although there are a number of problems, such as background requirements, to be worked out, but this is true of any environmental programme. The department has the necessary competence and the university's stress on quality should ensure adequate control. The Resource Analysis field is by no means overcrowded, and if the Water Resources programme is proposed and favourably appraised, we believe it would be a useful addition to the province's graduate work in geography.

(n) Waterloo Lutheran University

Our principal recommendation on Waterloo Lutheran University is for an appraisal of the programme for the Master's degree. At present the university's capability for such a programme appears to us to be considerably less than that of other provincial universities for which such programmes have been approved, but in all fairness we feel that the department is entitled to the in-depth evaluation which an appraisal would provide. Because operative mechanisms exist for interaction of both staff and students with the University of Waterloo, we urge that, while waiting for the appraisal process to be completed, graduate study in the Waterloo area should be concentrated at the latter university. In turn, the Waterloo department should be able to make judicious selective use of the scholarly resources available at Waterloo Lutheran.

(o) Lakehead University and Laurentian University

As stated at the first of this report, assessments were not carried out for the departments at Lakehead and Laurentian. We were supplied with information from both departments and had discussions with the chairmen.

We suggest that both departments have the potential to contribute usefully to the total graduate work of the province. There are a variety of ways in which this might be done. Both departments have faculty who could act as members of examination committees or as joint supervisors of students registered at other universities who wished to make use of the special northern locations of these universities. Lakehead could contribute to work in regional resource analysis and environmental problems, and Laurentian to work in regional development and land use planning. Both might well participate in local interdisciplinary programmes if and when such programmes are appraised, approved and introduced.

(p) Library Resources

The library resources at individual universities are extremely varied, the most important factors in this variation being the age of the university and the availability of government or other supportive library resources. The total resources in the Ontario system are impressive, especially when the government libraries and archives are included. We were told at several universities that the interlibrary loan system works very well, but a few of the graduate students interviewed disagreed, saying that it is too slow. We were also told that the provincial graduate research library at the University of Toronto is intended for the use of faculty and graduate students of all Ontario universities. We urge that every effort be made to take advantage of this library and its extensive resources. The interlibrary loan service should be improved if, in fact, it is not operating effectively.

We believe that the library resources that are, or can be made, available are adequate for the graduate programmes as we have recommended them.

6. ADDITIONAL CONSIDERATIONS

(a) Cooperative Ventures

Throughout the earlier discussion we have suggested a number of cooperative ventures that we consider desirable, and have commented on some that are now operative. To recommend more inter-university cooperation is to support a practice that nearly everyone agrees should be followed. Nevertheless, a litany of external pieties covers deep-seated, often bitter, rivalries among institutions and individuals which frequently seem to become more intense as distance barriers are reduced. There are, however, a number of other very real and very persistent obstacles to cooperation. For students to travel even modest distances poses serious problems of scheduling and costs in both time and money. The equitable division of teaching costs and Basic Income Units among cooperating institutions is another problem. In view of these obstacles, the Ontario geography departments are to be commended on the degree to which they have already developed cooperative ventures. Efforts should continue to be made, however, by governments, universities and departments to lessen the severity of the barriers to effective cooperation.

Interdisciplinary cooperation is particularly important for geographers. The diversity of interests of geography departments makes it imperative that both faculty and graduate students familiarize themselves with the closely related work of other departments and take advantage of the opportunities that association with other disciplines offers. Most of the Ontario departments of geography are involved in interdisciplinary work. For the most part, cooperation has been through urban, regional and environmental studies programmes rather than directly between departments. Although it is true some of these programmes are quite strong, it is also true that they vary widely in quality. It is our opinion that the most promising programmes are those which involve participation by a number of strong departments as opposed to separate entities with their own economists, psychologists, etc. Two examples of effective interdisciplinary programmes are the York-Toronto Transportation programme, which involves representatives from several disciplines as well as universities, and the Carleton interdisciplinary international programmes. Waterloo has a particularly close link with planning programmes through its placement in the Division of Environmental Sciences.

The Ontario departments of geography have developed some excellent inter-university programmes. Some of the most promising have been multi-university efforts in a particular field of geography such as GIRMS and the Friends of Climatology. Faculty and graduate students with similar interests present papers and carry on discussions at regular meetings. A similar arrangement, primarily involving Toronto and McMaster, is developing in theoretical and quantitative aspects of Urban-Economic geography. An example of an inter-university (and interdisciplinary) graduate course for which credit is given is the Integrated Aerial Surveys course in remote sensing. In Autumn 1972, ten students were taking this course which is offered by Waterloo (geography), Guelph (engineering), Toronto (civil engineering), Toronto-Erindale (surveying), and McMaster (geography). There are also a number of scattered examples of cooperation between two universities in graduate student advising and research for particular subfields.

We suggest that the GIRMS type of organization be encouraged and expanded to other fields such as Urban-Economic and Cultural-Historical, or perhaps to more operational subfields of these. Cooperative seminars such as the one on Integrated Aerial Surveys could be initiated by such groups. We also recommend that there be selective cross appointment of members of the graduate faculties of nearby universities. This would strengthen graduate course offerings, independent study, and dissertation direction at both institutions. There are three groupings within which this type of cooperation appears to be most promising. The central group of Toronto, York, McMaster and Guelph has cooperative opportunities in historical and urban geography, and in Climatology. Toronto and York can reinforce each other in Cultural-Historical and Urban-Economic geography; Toronto and McMaster in urban geography, particularly in theoretical approaches; McMaster, Toronto and Guelph in Climatology. The grouping of Ottawa, Carleton and Queen's has cooperative opportunities in urban and historical geography. Queen's and Carleton can reinforce each other in historical geography; Ottawa and Carleton in Urban-Economic; Ottawa and Queen's in Urban-Economic. The Western Ontario-Waterloo group has particularly strong cooperative possibilities in Resource Analysis since both have Ph.D. programmes with primary emphasis in this field. In addition, closer linkages between Windsor and Western as well as between Waterloo and Guelph are desirable. For research on certain areas in northern

Ontario, cooperation with geography departments at Lakehead and Laurentian offers excellent opportunities.

(b) Alternatives

The suggested Ph.D. enrolment figures are based on the assumptions that: (i) there will be approximately 24 positions for new graduates annually; (ii) the ratio of registrations to degrees granted (on a steady-state registration basis) will be about 5 to 1; and (iii) the movement of new Ph.D. graduates into, and out of, Ontario will essentially balance. The suggested enrolment in Master's programmes cannot be related by us to job opportunities because we have no estimates of these. Our allotments are therefore based on an essential maintenance of the ratio of 2.5 Master's students to 1 Ph.D. student.

Despite the difficulties in arriving at objectively based estimates, we believe that our proposed allotments are realistic considering all the factors involved. Unless there are very strong reasons of which we are unaware, any substantial reductions in the recommended system totals are undesirable and probably not in the best interests of graduate education in Ontario.

If our proposed Ph.D. enrolments should be considered to be somewhat too high because our assumptions are wrong, we are strongly of the opinion that these proposed enrolments should not be formally reduced because:

(i) We find it impossible to make clear distinctions in the quality of the Ph.D. programmes that are, or can be, offered by five of the geography departments. Some specialties are strong in one department, while other specialties are strong in others. We feel that the proposed allotments and emphases for the various specialties will provide balanced Ph.D. opportunities and that Ontario geography as a whole will be strengthened by having Ph.D. programmes at the seven universities recommended.

(ii) New programmes at Queen's and York cannot possibly produce Ph.D. graduates in less than three years, which means that their contribution to the total will not be felt until 1976-77.

(iii) The 5:1 ratio of enrolments to degrees awarded will not be reached during the period required for enrolments to reach the

proposed totals. We consider this as a tight but justifiable ratio when steady-state enrolment is reached.

(iv) We have presented specific figures rather than ranges, and we believe that a reasonably permissible range will take care of a moderate overestimate of desirable enrolments.

If it should be considered that our proposed enrolments are much too high and that the reduction should be so drastic as to make the system total for Ph.D. enrolments approach those recommended for Toronto and McMaster, then Ph.D. programmes should be restricted to these two departments. To permit anything to reduce the contributions of these two internationally recognized departments would be a serious disservice to Ontario. Major cooperative inputs by the departments at the other five universities should be encouraged. We do not believe that sharing academic poverty is a justifiable policy under such circumstances.

Should it be judged, however, that we have underestimated demand and interest and that the number of Ph.D. enrolments should be increased, we urge that special attention be directed to the specialties we have described as "neglected fields" and that a general pro rata increase in numbers for approved departments be effected.

If the proposals for Master's enrolments should be considered to be too high, the first restriction should be on new programmes. Further restriction could conceivably require a reduction in the numbers proposed for each department but, if any department foresaw an enrolment below ten, we suggest a temporary phasing out of the programme and a moratorium until the situation improves.

If we have underestimated Master's enrolments, decisions on desirable enrolments should be more closely related to the perceived demands for Master's degrees than in the case of Ph.D. programmes. An outstanding Ph.D. programme can create its own demand, but this is far less likely for Master's programmes. The situation could be met by pro rata increases in enrolment or by increasing the smaller numbers now allotted. Additional study of the part-time registrants might support disproportionate increases in those departments with programmes designed for students who must do all of their Master's work on a part-time basis.

(c) Periodic Re-examination

As the Discipline Group continues its examination of geography in Ontario, we suggest three topics for periodic re-examination: employment opportunities; enrolment trends in different categories; and cooperative ventures.

While estimates of demand for Ph.D.s formed much of the basis for the recommendations in this report, there seem to be few reliable empirical bases for making such estimates in the different specialties of geography. We have proposed only system totals for the various specialties and Ontario geographers should re-examine the actual situation regularly. Faculty members at most institutions expressed the view that the numbers of non-academic positions in urban study, resource analysis and climatology are increasing rapidly. We recommend, however, that the actual placement of geographers in both academic and non-academic positions be carefully monitored and that our initial demand estimates be subjected to periodic revision.

We also recommend that the Discipline Group keep a running record of graduate enrolment in the different categories. This will involve a continuing reinterpretation of the categories themselves but may provide early indications of trends in student interests. For example, many department chairmen anticipate a significant increase in student interest in Resource Analysis which is not yet evident in the data supplied to us, although this may be due to widely varying practice in interpreting this category.

Whatever conclusions may be reached regarding our detailed proposals, and whatever significant changes may occur in the demand for programmes in the various categories, we firmly state that immediate market demands must not be allowed to distort the ultimate values and purposes of any academic discipline, particularly at the Ph.D. level. Within the larger departments in particular, and for the province as a whole, we feel that staffing additions should aim at balance, and avoidance of neglect of fields which are of fundamental importance to the discipline, even if they are temporarily in less demand. This could apply at present to Biogeography, Remote Sensing and some aspects of Cartography, some subfields of Cultural-Historical and Resource Analysis, and to philosophical concerns with the purposes and methodology of the discipline. Specifically, current fashion

should not be so compelling as to allow deep erosion of traditional regional expertise. These principles should be kept in mind by those who will have responsibility for carrying out regular re-examination of geography offerings in the province.

We also recommend that the Discipline Group play an active role in encouraging cooperative efforts. It should be useful to maintain a current inventory of cooperative projects and possibly to select one type of cooperation at a time for more careful investigation and selective encouragement. We believe that such activities on the part of geographers will greatly strengthen the graduate programmes in geography that can be offered by the universities of Ontario.

7. SUMMARY OF MAJOR RECOMMENDATIONS

In comparative international terms, the position of geography as an academic discipline in Ontario is very good. There are excellent facilities at several universities and the general library resources for research in geography are impressive. The most important recommendations resulting from the assessment covered in this report include:

1. The Ph.D. programmes at Queen's and York should be approved.
2. By 1975-76, the distribution of the proposed 120 Ph.D. students in geography should be 45 at Toronto, 25 at McMaster, and 10 each at Ottawa, Queen's, Waterloo, Western and York.
3. The ratio of Master's to Ph.D. students should approximate 2.5:1.
4. Rates of completion of degree programmes should be greatly improved at both the Ph.D. and Master's levels. The ratio between enrolment for the Ph.D. and degrees granted should approximate 5:1, under conditions of steady-state enrolment.
5. Part-time Master's programmes should be available to students who must do all of their graduate work on a part-time basis. York, Carleton and Ottawa can expect many such students and should consider offering them only non-thesis degrees. All other part-time enrolments should be kept to a minimum.
6. Financial support for graduate students should be adequate to

permit students to select the most appropriate department for the particular programme desired. Such selection should not be dictated by the level of finances available. Field work should be considered as an essential part of graduate education and should be adequately financed.

7. There should be an increase in work in Biogeography and in those aspects of Cartography involving computer graphics and information systems.

8. Regional expertise in areas other than Canada and the United States should be strengthened.

9. Interdisciplinary work should be expanded and strengthened both within and between universities. Inter-university graduate faculty appointments should be considered. Cooperative ventures in specific fields (along the lines of GIRMS and Friends of Climatology) should be further encouraged.

10. The overall evaluation of geography departments should include work in Geomorphology and Soils.

11. Membership on graduate faculties, or its equivalent, should be based on scholarly achievements as shown by past publications and current research activity.

12. The Geography Discipline Group, or its successor, should periodically review employment opportunities, enrolment trends and cooperation among departments. It should give special attention to desirable enrolments during the years after 1978.

A P P E N D I X B

DISCIPLINE GROUP RESPONSE

McMASTER UNIVERSITY

HAMILTON, ONTARIO, CANADA

DEPARTMENT OF GEOGRAPHY

March 22nd, 1973.

Professor M.A. Preston,
Executive Vice-Chairman,
Advisory Committee on Academic Planning,
Council of Ontario Universities,
102 Bloor Street West,
Toronto 181, Ontario.

Dear Dr. Preston:

The Geography Discipline Group met on Saturday, March 17th to consider the Final Report of the Geography consultants. The comments of the Group on the Report are set out below. We note that under the Procedures for this assessment, a university may make "a formal statement" on the report and that any such statement shall be transmitted to the discipline group. We would like, therefore, to reserve the right to make additional comments on the Report in the event that universities do prepare such formal statements.

The Discipline Group commends the consultants on the overall quality of their report. They have presented an impartial and detailed analysis of the discipline's strengths and weaknesses which will be invaluable in planning for the future. We share the conviction, expressed in their opening paragraph, that Geography in the province is strong when viewed in the broader context of North America and we also endorse the occasional comments throughout the report concerning the international reputations enjoyed by particular groups in certain departments.

The Discipline Group also strongly supports the recommendation made in the second paragraph of the report to the effect that any overall evaluation of geography departments per se, and we would add of Geography as a discipline, must include the data on geomorphology and pedology. As a group we find it very difficult to make critical assessments of the different forecasts in this report when the data on these other two subfields are unavailable, especially when it is considered that these two subfields are an important component of many of the Geography programmes in the province and thereby influence quite strongly departmental planning and policy. We note, with considerable disappointment, the fact that the first draft of the Solid Earth Sciences report makes no attempt to provide projections by subfield comparable to those given in this Geography report. We are extremely doubtful, therefore, that any realistic numbers will emerge from these assessments which might be used as guidelines for future planning. For this

reason we urge that the Geography Discipline Group continue to be kept fully informed of the progress of the Solid Earth Sciences and the Planning and Environmental Studies Assessments and that it be given full opportunity to review and comment on these other two reports.

The Geography group strongly endorses the consultants' recommendation that the Ph.D. programmes at Queen's and York be approved and urges that this recommendation be implemented without delay. Notwithstanding the comments made above concerning the difficulties of evaluating the numerical forecasts, we believe that the consultants' assessment of the strengths of these two departments within the provincial system is correct and we are firm in the belief that they have significant contributions to make to doctoral work in the province.

The consultants in the latter part of their report put forward certain suggestions concerning alternatives in the event that their projections are considered too high. Many members of the discipline group feel that the consultants did not think through carefully enough the implications of the alternatives which were suggested (for example, what happens to the allocations by speciality in Table III?), and that if any reallocations are to be made then they should be made over the seven departments.

On the matter of Table III, the group urges that the row and column totals not be taken seriously. While some members agree that such figures provide useful guidelines for planning, the majority feel that there are serious weaknesses in the plan. First, the consultants made no serious attempt to guage the future levels of demand by speciality and hence, the relative strengths they assign to the different columns are questionable. Second, the assignment is so bound by the established subfield categories that it is likely to be stifling in regard to future new programmes that may emerge. In particular, it is felt that the consultants have given a very rigid definition of their "Other" category which we as a Group would never have agreed to when we originally set up the subfields.

The assignment of the P and S symbols in Table III is also suspect. In their discussions of particular departments, the consultants make clear that the assignments were done on a provincial basis. Two comments then appear to be in order. First, the subfields are defined so broadly that these assignments on a province-wide basis really are meaningless. This is particularly so in regard to"urban-economic"; a department given an S in this subfield may have particular strength in one area, for example urban behavioural analysis, that is not matched in a department assigned a P. Second, the assignment may ignore the possibility that within a particular department

- a speciality given a P may be no stronger than one in the same department which is given an S.

The question of "regional analysis" prompted considerable comment. The consultants' discussion of this question appears to be weakened by certain internal contradictions. For example, on p.22 they acknowledge that geographers "have played a significant role in interdisciplinary area study programmes" but then later on the same page, they comment on "the degree to which regional interest in areas outside the United States and Canada seems to be neglected." The discipline group feels strongly that our strengths in regional analysis are underrated in the report, and that far greater acknowledgement should have been made of the existence of a number of departments in which there are scholars who have extensive research and field experience in foreign areas, advanced linguistic skills, and considerable experience in working with faculty and students in other departments within the university in foreign area studies.

The group is anxious to comment on the roles assigned in the report to the departments at Lakehead and Laurentian. While acknowledging the physical difficulties associated with the possible liaison of these departments with other programmes in the province, the group believes that they do have the potential to make important contributions to graduate work in environmental studies and regional planning and analysis and that the possibility of them offering Masters work in geography in the future should remain open. We understand that this is consistant with COU policy in regard to the "emerging" universities and Masters degree work.

The discipline group strongly endorses the point made on p.13 of the report, specifically, that "competition for students among departments should not be primarily on the basis of remuneration". The related question of striving for some agreement in regard to graduate support levels within the province is one that is to be taken up by the committee of Geography Department chairmen in the near future.

On the same page of the report (p.13) the consultants urge that field work be considered as an essential part of the research needs of geography students. We agree but we would underscore heavily the point that fieldwork is also an important part of many instructional programmes in Geography and that departmental budgets should acknowledge this fact to a far greater extent than is currently the case.

A final comment relates to the treatment of Masters programmes in the report. We feel that as with Table III, there must be considerable caution exercised in studying

the figures given in Table IV. At the Masters level, more than at the Ph.D. level, it is certain that new fields of study will emerge and will be reflected in the degree programmes offered. Further it would be consistent with the COU policy already referenced, for some of the newer universities to begin offering Masters work in the future. It is especially important, in view of the pressures being exerted in this province for greater commitments on the parts of the universities to part-time studies, to allow for more flexibility in the structuring of part-time Masters porgrammes. In this context, different departments probably will play more of a parochial and regional role rather than the provincial role emphasized in this report. On a more technical level, it is not at all clear why the consultants urge on p.40 that part-time Masters programmes should be non-thesis ones. We feel that this restriction is unnecessary.

In concluding, may I seek to give expression to some ambivalence that our group feels at this juncture. On the one hand, we are very anxious to see immediate implementation of some of the recommendations of the report and in particular that relating to the Ph.D. programmes at Queen's and York. On the other hand, we are very unhappy over the facts that the SES report appears so general in its draft form, and that the Planning and Environmental Studies assessment has not kept pace. We had anticipated and quite properly we feel, that the three reports would be prepared together and that we would have had an opportunity to review them as a set. In retrospect also, we feel that the Procedures might have allowed for individual faculty or perhaps groups of them, either within departments or as representatives of ongoing inter-departmental efforts (for example, GIRMS), to have had the opportunity of commenting on the final report.

I sincerely hope that ACAP will find our comments useful. We are prepared, of course, to enter into any further discussions that may be considered essential either to this Report or to the other two assessments that are of direct concern to us.

Very sincerely yours,

Leslie J. King

Leslie J. King,
Chairman, Geography Discipline Group.

LJK/k

c.c. Geography Discipline Group

On April 7, the Discipline Group decided that they did not wish to revise

A P P E N D I X C

UNIVERSITY COMMENTS

Comments appear from Brock, Carleton, Guelph, Ottawa, Queen's, Toronto, Waterloo, Waterloo Lutheran, Western Ontario, Windsor, and York.

Other universities did not comment.

Geography Planning Assessment
Consultants Report

We are in general agreement with the report of the consultants insofar as it directly concerns Brock University. We have reservations regarding the form of Recommendation 5 (p.40).

In present economic circumstances many full time students who have completed formal course work and residence requirements, as specified by University regulations, will be compelled to seek employment while completing a thesis. Such students are then classified as part-time students. Undue proliferation of this segment of the student body is prevented by time limitations for completion of the program imposed by University regulations(1).

No doubt other Universities experience the situation described above. The form of the recommendation implies that the situation must be discouraged by the Universities.

The restriction to a non-thesis program for part-time students is discriminatory and, if implemented, could prevent the tailoring of the program to suit the best interests of the student.

---

1. The regulations are:

> For students holding an honours bachelor's degree, courses and thesis requirements must be completed within three years from the date of first registration as a full-time graduate student or within five years from the date of first registration as a part-time graduate student.
>
> (The regulations are designed for M.A. and M.Sc. programs).

March 21, 1975

Carleton University Comments on the Consultants' Report for Geography Planning Assessment

Carleton University considers the Report of Geography Consultant Panel to Advisory Committee on Academic Planning, Ontario Council on Graduate Studies to be on the whole a careful and reasoned assessment of university geography in the province at the time the report was being prepared (i.e., 1972). (The report must of necessity be kept up-to-date, because the situation in geography in an individual department and collectively within the province of Ontario is constantly changing as departments respond to advances in modern geography). Our interpretation of the report in terms of Carleton is that it supports our basic goals and recognizes the strengths that we have.

We believe, undoubtedly like most university departments, that we can offer something valuable, and in some respects unique to the training of specialists in geography. We believe our special strength is a graduate program oriented toward research in selected subfields, most of which have an applied research potential. Our department has grown more slowly than most geography departments in Ontario. Historically its emphasis has been on undergraduate studies, and the introduction of a Master's program several years ago was considered by the department as the first step toward the eventual offering of a Ph.D. program. The fields of specialization of the faculty are those recognized as being closely linked to cores of intense intellectual activity in the discipline, or, as in the case of physical geography, those enabling a team approach to be made to important, and so far understudied, problems of the Canadian environment.

Many of the problems raised by the consultants had already been recognized here. The interaction of the physical and human elements of geography at the graduate level is a specific concern. The differences have been caused not by intent but rather the team approach of the physical geographers and individual action by human geographers. A possible reorganization of program requirements will be considered, and if accepted it should reduce, if not remove this problem.

Cooperation with other Geography Departments, especially Ottawa University, and to a lesser extent Queen's, already exists. We have shared visiting professors, had at least two members of our staff on Ph.D. supervisory committees at Ottawa University, linked graduate courses in each department (half taught in one department, half in the other), and in certain areas have a good exchange on a personal basis. Our laboratories can be used by their students on a charge basis, provided space is available, and a Ph.D. candidate from the University of Ottawa is currently using our facilities. These areas of cooperation have been developed by individuals to meet specific needs. Administrative arrangements, outlined in our calendar, enable our own students to study in other institutions and allow students from other universities to study here.

Exchange of faculty and cross appointments would have to be considered very carefully; tenure and promotion would be a problem as would the division of time; limited physical and human resources would affect the process, unless a balanced exchange could be developed. It would be unreasonable to expect an instructor to travel extensively between campuses for limited contact with students. It would be better to bring the students to the resources rather than take the resources to the student.

Carleton has been building toward a Ph.D. program but it is not yet ready to offer such a program. The prospect of increasing cooperation with Queen's and Ottawa in selected fields of doctoral research is attractive.

The question of the role of part-time students in our graduate program has many implications. We recognize the need to do more part-time work in the future than we have in the past. We believe that the Carleton M.A. in Geography should remain a research-oriented piece of work, and we are not inclined to offer an M.A. by course work. Carleton's long history of part-time studies suggests that fragmentary coverage of a discipline, by a course program alone, would not provide the immersion and stimulation that is available to full time students. At least one term of full time study would be necessary and standards of entry and performance in the program should remain the same for full-time and part-time students. The development of a larger part time student program would demand increased physical and human resources. Since we recently increased the rigor of our departmental requirements for acceptance, we expect not only higher standards but more rapid completion of degrees. Quality control, we believe, is the best way to make effective use of our departmental resources.

One of our greatest concerns is the possibility that planning for a large number of departments, each different and having its unique qualities, may lead to the assigning of special kinds of study to individual departments. There is little enough opportunity for development of imaginative minds today, and we believe that too rigid adherence to the categories identified for ACAP might limit the individual whose special aptitude does not appear until he has committed himself to a particular department. In certain subjects like cartography, climatology, and remote sensing course content is integrated in the study or research of the more systematic kinds of geography. Such subjects may or may not be studied for their own sake. It would be unfortunate if, a student who showed interest in pursuing such topics in depth and could get adequate supervision, should be dissuaded, because departmental personnel had been linked to other categories.

Finally, we wish to endorse recommendation #6 that competition for graduate students should not be financial.

In summary, we recognize the need to develop more internal cohesion between the physical and cultural geographers of our department. We believe that we have made some progress in this effort in the recent past, despite the need for the geotechnical group of our department to develop a strong research interest in a rather narrow field. Cooperation with the University of Ottawa, like that outlined above, is working; continued cooperation with Ottawa and Queen's is envisaged.

We recognize the relatively slow growth of our graduate program, given the fact that the Department of Geography was established at Carleton University in 1957. During the first ten years of its existence the Department of Geography directed its efforts towards the establishment of a good honours program in Geography. It is only at this stage that we are moving with confidence into graduate work, and we seek the opportunity to develop our resources in harmony with the other departments within the Province of Ontario.

March 21, 1973

UNIVERSITY OF GUELPH STATEMENT TO ACAP

RE: CONSULTANTS' REPORT - GEOGRAPHY ASSESSMENT

The University of Guelph generally endorses the report of the Geography Consultants, but seeks confirmation of its interpretation at certain points. Additional comments are warranted on other points.

The recommendations with regard to the University of Guelph appear adequately to reflect our own careful considerations with the exception of one point, which may be a little complicated by reason of our organizational pattern. Table III, p. 15, carefully sets apart from all other doctoral programs the Guelph Ph.D. in Agrometeorology, and suggests a total enrolment of eight per annum. Table IV, p. 16, does NOT set the Guelph M.Sc. program in Agrometeorology apart from the others. Consequently, it is implied that Agrometeorology students, as well as geography students in Climatology, are included in the University total of fifteen (recommended). The University of Guelph interprets the Table in the light of the consultants' comments on page 31 to mean that the Agrometeorology M.Sc. enrolment is included within the system total for Climatology (twenty) and that the Geography total of fifteen for the University represents Geography students alone. We consider that five M.Sc. Agrometeorology students would represent a satisfactory number relative to the eight Ph.D. students, but these should not, in all fairness, be a "charge" against the distributing of the fifteen Geography students amongst the subfields cited.

We wish further to observe that there are many aspects of the Agrometeorology program at Guelph and the Climatology program at McMaster that resemble one another, and a clear distinction is difficult to make. It is also worth noting that the "Friends of Climatology" include scientists from Quebec and the United States; in the context of an Ontario report, it should be clear that references are to the Ontario Climatologists.

The concluding sentence of the first paragraph of the statement on the University of Guelph (page 30) deserves some comment.

(a) The Geography department does include one Climatologist who works closely with the Agrometeorologists on the one hand and with the Geomorphologists on the other. These close relationships may have been overlooked.

....

Re: Geography Assessment

(b) The comment on the lack of association with the "biophysical side of the department" may represent a failure to recognize the extent to which the program has access to a number of departments which, at Guelph, provide instruction in subjects which may be available in geography departments at other universities.

(c) The reference to "only an unpretentious and limited course" is a curious one, which we take at face value as expressing commendation of our realistic approach by which we emphasize graduate work only in a few subfields in which the University has major strength. We do, indeed, make no unwarranted claims and, as the consultants point out, "can handle (our program) quite effectively".

We take note of the consultants' encouragement of inter-university cooperation, especially of Guelph-McMaster and Guelph-Waterloo associations. We are fully prepared to discuss formal or informal arrangements for cooperation. We consider it important, however, to have a clear definition of "joint appointment -- the words do not mean quite the same thing to all those who use them. In the present assessment, the consultants do not define the term, assuming unanimity of interpretation -- which is unjustified.

We have read with interest the consultants' analyses of the fields of specialization, noticing particularly their comments on Biogeography (p. 17) and on Hydrology (p. 18). The consultants and the discipline group have apparently had some difficulty in categorizing the special fields within the discipline known as Geography. These problems appear to have been complicated by a further confusion of geography as a discipline with geography as a department (a convenient administrative unit). This further confusion may explain the apparent lack of interest at Guelph in the field of Biogeography -- a field in which we could assume that a good deal of work is being done at Guelph, but NOT in the department of geography. Thus, where the consultants comment, "Biogeography is a rather neglected field in Ontario" (p. 17), they mean that it is neglected by departments of geography. It does not necessarily follow that the subject matter is being neglected. What is needed is a clear understanding of the subject matter included in this field, on the basis of which a land- and biologically-oriented university, such as Guelph, could set out its activities -- regardless of the name of the administrative unit concerned.

....

Re: Geography Assessment

A second instance in which confusion creates an illusion is with regard to Hydrology. It is true that there is little or no input of our geographers to the Hydrology group, but for a number of years a Hydrology group has operated M.Sc. and Ph.D. programs under the chairmanship of Professor H. D. Ayers, Director of the School of Engineering. His School and the Department of Land Resource Science have been most involved in the program. It is one for which increasing applications are being received, not only from graduates in engineering, but also in the "earth, atmospheric, biological and physical sciences" (to quote our 1972-73 Calendar, p. 59). The concluding sentence of the consultants' statement (p. 18) almost paraphrases our Calendar statement. It is possible, of course, that our Hydrology, associated with engineering and land resource science, is different from the Hydrology which, as the consultants put it, "is, as a rule, very closely associated with one or another of Geomorphology, Climatology, or Soils Geography." In 1971-72 at Guelph there are three M.Sc. students and five Ph.D. students enrolled in the Hydrology program. Guelph would plan to continue its activities in this field, which may be of interest to geographers at the other Ontario universities.

The field of Resource Analysis, described by the consultants on p. 21, includes a number of subfields in which departments other than geography are considerably involved, at both the Master's and the Ph.D. level at the University of Guelph. It is true that the graduates will not be identified as geographers, but their knowledge of the subject matter will be comparable even though with a different emphasis. In considering employment opportunities for Masters and Ph.D.'s in geography on a system basis, it would be prudent to bear in mind the Guelph potential in meeting part of the demand.

In the light of the foregoing, it seems worth emphasizing the fact that the University of Guelph, a land- and biological science-oriented university, is organized into departments which do not match the typical subject departments of other universities. Thus, in other planning assessments similar complications may arise in respect of the reports of the consultants, which will generally deal -- as they should -- with the problems of the other universities with their more usual alignments of subject matter. In such a situation the unusual organization of the University of Guelph may cause its resources and capabilities to be insufficiently regarded, if not overlooked.

****

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550, RUE CUMBERLAND

OTTAWA, ONTARIO
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UNIVERSITY OF OTTAWA
550 CUMBERLAND STREET

CABINET DU RECTEUR

OFFICE OF THE RECTOR

March 27, 1973

Dr. M.A. Preston,
Executive Vice-Chairman,
Advisory Committee on Academic Planning,
Ontario Council on Graduate Studies,
102 Bloor Street West,
TORONTO, Ontario, M5S 1M8.

Dear Dr. Preston,

This letter is in response to your request for university comments on the consultants' report on the Geography planning assessment. Our comments are listed below.

1. On page 27, paragraph f, in a reference to bilingualism at the University of Ottawa, one reads that "duplication of offerings is expensive" and that "this commitment has placed an unusual strain on the department". We should like to emphasize that whereas certain undergraduate geography courses are duplicated in English and in French and such duplication is expensive, there is no duplication in geography at the graduate level. We, therefore, request that this reference be corrected before the report is given wider distribution.

2. In addition to the areas in which we are considered capable of offering Master's level supervision, we believe that our department of Geography has the capacity of offering Master's level work in the field of Cartography (including remote sensing), a specialty which is represented by four staff members (Douglas, Phipps, Gagnon and Johnson).

3. While agreeing with the consultants that our specialization in Regional Geography should be strengthened, we should like to point out our particular qualifications in this area especially the existing competence in Latin American and Asian Geography. Moreover, the multilingual and multinational staff of our Geography Department and their ready access to special expertise in federal government departments and in embassies located in Ottawa make such specialization particularly appropriate.

....

4. Our geographers believe that the numbers and the provincial distribution of Master's and doctoral students recommended by the consultants is realistic and acceptable.

Yours sincerely,

Roger Guindon, O.M.I.,
Rector.

QUEEN'S UNIVERSITY
KINGSTON, ONTARIO
SCHOOL OF GRADUATE STUDIES AND RESEARCH

March 22, 1973

Dr. M. A. Preston
Executive Vice-Chairman
Advisory Committee on Academic Planning
Council of Ontario Universities
102 Bloor Street West
Toronto, Ontario M5S 1M8

Dear Dr. Preston:

Herewith as requested are comments concerning the report of the Geography consultants to ACAP. I was involved in the compilation of these comments and concur with them.

The small amount of time allowed for preparation of these comments obviates the possibility of an official University response, which at Queen's requires Senate action. Therefore the University reserves the right to make additional or different comments at a later time.

Yours sincerely,

J. E. Hogarth

J. E. Hogarth
Acting Dean

JEH/mb
Enclosures

QUEEN'S UNIVERSITY
KINGSTON, ONTARIO

Faculty of Arts and Science

Comments on the Report of February 19, 1973

of the Geography Consultant Panel to A.C.A.P.

1. We endorse and support the general conclusions and recommendations of the panel.

2. In particular, we endorse the proposed scales of registration of Ph.D. students and Master's students in those areas of Geography at Queen's covered in the present report. We endorse the proposed areas of emphasis. We regard the proposed Ph.D. program at Queen's as highly desirable and resources for its implementation have already been committed by the Faculty of Arts and Science.

3. In the event of the contingency mentioned on page 38 of the report, that is, if the Ph.D. projections for the Province were reduced, we would oppose the restriction of the Ph.D. programs to two universities as suggested in the report. At Queen's University the strength of the Ph.D. programs in related departments such as Economics, Political Studies, History and Geology in conjunction with the favourable appraisal of the Department of Geography would, we judge, enable us to offer a first-class education to Ph.D. students in the Department of Geography, even if the numbers were less than those primarily recommended in the report. If there were a fixed number of Ph.D. students in Ontario there would be no financial advantage to the Province in having them concentrated in only two universities. A smaller department which has been favourably appraised and which has strong support from contiguous departments may well offer as good an environment for a Ph.D. student as a larger department and at the same time help to provide a desirable variety of specializations and academic backgrounds in the Province. If the number of students were to be reduced below the considered recommendations of A.C.A.P. and of the panel, such a reduction should be made by reallocation of students among all the universities concerned, rather than by the elimination of Ph.D. work at universities whose departments have already been favourably appraised.

4. We endorse the recommendations concerning Queen's University in Section 3 (g) on pp. 28-29 and indeed have just made a major appointment as recommended.

5. We note that on pages 16 and 28 of the report, Master's work at Queen's on climatology is endorsed, and assume that it was by oversight that Queen's was omitted from the list of universities in this field at the Master's level on page 19, and that this point will be corrected in the final report.

OFFICE OF THE VICE-PRESIDENT
INSTITUTIONAL RELATIONS AND PLANNING

UNIVERSITY OF TORONTO
TORONTO 181, ONTARIO

March 28, 1973

Dr. M. A. Preston
Executive Vice-Chairman
Advisory Committee on Academic Planning
102 Bloor Street West
Toronto M5S 1M8, Ontario

Dear Dr. Preston:

My colleagues have now had an opportunity to look at the Geography assessment for ACAP and the response of our Department of Geography.

I am enclosing the comments made by the members of the staff in Geography and add to those comments the support of the University of Toronto.

I hope that the delay in mailing this response from the University will not inconvenience you seriously.

Sincerely yours,

J. H. Sword

J. H. Sword
Vice-President
Institutional Relations and Planning

University of Toronto

Comments on the ACAP Geography Report

The report is of excellent quality and the consultants are to be complimented for a task thoroughly and well done. By reviewing the development and present status of Geography in Ontario Universities they have contributed greatly to an understanding of the discipline and its importance at the graduate level. The overall high quality and good balance of the report, however, does not remove the need to press for certain additions, elaborations. shifts in emphasis and questioning of interpretations.

1. The consultants fully recognize the difficulties created by the omission of geomorphology and pedology from the survey. Nevertheless it must continue to be argued, most vigorously, that it constitutes a most serious violation of the inherent unity of geography. The contributions of the geography department at Toronto in these fields have become classics in Canadian geography. Our present geomorphologist is a scholar with an international reputation. First class work is done in soil science.

A consequence of the omission of these sub-fields from the survey makes the totals allotted to various departments more or less meaningless. The work in geomorphology and soils is an integral component of the graduate programme in the department, and accordingly should be reflected in the totals.

2. The consultants should be urged to recommend that no action be taken on the Geography Report until similar reports have been completed for the Solid

Earth Sciences and Planning and Environmental Studies. Any discussion about the future of geography outside the context of those fields will be a futile exercise.

The department at Toronto is strongly committed to studies in regional analysis, resource studies and urban studies. Through cross-appointments to the Centre for Urban and Community Studies, the Institute of Environmental Sciences and Engineering and the Department of Urban and Regional Planning, as well as in various aspects of its research programme, the department reflects its great interest and involvement in these fields of study. The strongest possible steps should be undertaken to ensure geography's participation in the report of the assessment of Planning and Environmental Studies.

3. The statistics dealing with future enrolment for the M.A. degree may have to be substantially increased if the demand for graduate work among high school teachers increases. This may have to be a broadly based study programme, possibly with a certain amount of emphasis on regional expertise.

Specific Comments

1. Evaluating the resources in Toronto the consultants could have looked more closely at the quality of the library resources, both in the University and in the immediate vicinity of the campus (the Toronto Public Library, the Legislative Library, the Ontario Archives, The Royal Ontario Museum, the Canadian Institute of International Affairs).

2. It is unfortunate that the report does not say more about the department's regional expertise in foreign areas. Three major areas stand out: Latin America, The U.S.S.R., and China. In each of these fields our

staff maintains close liaison with other departments in the University: the Latin American Studies Programme, East European Studies, and East Asian Studies. Other members of staff are very much concerned with certain specific aspects of developing countries. As far as Toronto is concerned, interest in areas outside the U.S. and Canada does not seem to be neglected (p. 22).

3. No reference is made to Toronto's strength in the study of the philosophy of geography. Professor May is one of the leading scholars in this field on the continent. Toronto has, in this sub-field, the only strength in the entire Province, indeed in Canada as a whole. It is not clear whether the lack of reference to this field affects the totals allotted for the programme. If this is not the case the number of Ph.D.'s should be increased by two and M.A.'s by four.

4. Table III is to be interpretated as providing intra-departmental comparisons. This means that as far as quality is concerned an S in one department may be fully the equivalent of the work in another department with a P rating in a specific sub-field. Cultural-historical geography at Toronto illustrates the point very well. The work done at Toronto is unquestionably first rate. Recently Professor Lemon's book The Best Poor Man's Country (Johns Hopkins University Press) was awarded the Albert J. Beveridge Award by the American Historical Association. It was the first time that a work in historical geography was singled out.

5. We welcome the report's emphasis on the significance of field work for geographical studies, comparing it with laboratory equipment needs in physics and chemistry (p. 13, p. 41).

Response from the University of Waterloo

to the Report of the Geography Consultant Panel

to the Advisory Committee on Academic Planning

submitted to A.C.A.P. March 23, 1973

General Comments:

The University of Waterloo finds itself in general agreement with this report and with the major recommendations which are summarized in the final section of the report. In particular, we are in agreement with the proposed overall allotment of graduate students to this university. The recommendation that there should be 10 Ph. D. students and 35 Master's students at the University of Waterloo is consistent with our own enrolment projections for the programmes in the specialties in Geography covered by the planning assessment.

Specific Comments:

While we are in agreement with the general recommendations of the consultants, we wish to submit to A.C.A.P. the following comments on specific details contained in the report:

1. The consultants mention a general weakness throughout the province in the field of Biogeography. At the University of Waterloo the strength in Biogeography and Ecology lies in two other departments within the Faculty of Environmental Studies rather than in the Geography Department. We believe that we have considerable faculty strength in this area which is available to support the graduate programme in Geography. While this was made known to the consultants at the time of their visit, they have perhaps not considered it as carefully as they might have because the faculty involved are not members of the Geography Department. These comments will be brought to the attention of the consultants for the Planning and Environmental Studies assessment, who will be looking at the two departments concerned.

2. The report allots a secondary interest to Waterloo (along with Western and York) in the field of Urban-Economic geography. We believe that this may be somewhat misleading because of the breadth of the category involved. Thus the University of Waterloo would claim to have a primary interest in and

considerable strength in some of the specialties within this area but not in others. It is therefore difficult to interpret the broad designation of a primary or secondary interest for this category as a whole.

3. A more serious disagreement in detail is with the statement in the report that Waterloo does not have the capability to support Master's work in the Cultural-Historical field. We do not agree with this. We believe that we do have sufficient strength in some of the areas that fall within this broad category to support work at the Master's level.

4. In the section of the report devoted to the programme at the University of Waterloo (page 26), the consultants refer to our strength in the field of Remote Sensing and suggest that Waterloo would be a logical place for the development of a programme in Computer Cartographics. We certainly intend to maintain our programme in Remote Sensing and Computer Cartographics at its present level. Any significant expansion of this programme however would be quite costly. At the present time, this would be beyond the University's resources and could be undertaken only if external funding were available to support the programme at least in its initial stages.

5. General reference is made to the cooperation which we have developed with other Universities. It is certainly our intention to maintain our links with Waterloo Lutheran and Guelph. We would like to mention in particular the cooperation in the Urban-Economic field with Guelph. We would be quite willing to enter into discussions with Western regarding the development of cooperative work in Resource Analysis as suggested in the report. A.C.A.P. should be aware, however, of the difficulty of arranging for joint graduate faculty appointments between universities. In our view cooperative arrangements are best worked out with as few formal encumbrances as possible.

6. On page 27, the consultants refer to the "placement of the department in the Division of Environmental Sciences". At the time of the consultants' visit the department of Geography was part of the Division of Environmental Studies. Since that time this Division has become the Faculty of

Environmental Studies. We would appreciate it if this reference in the consultants' report could be corrected.

Comments on Alternatives:

The only proposal in this report to which we wish to make a strong objection is the proposed alternative allocation of enrolments in the event that the overall enrolment in the province is substantially reduced. We are confident that this situation will not arise but we feel we must comment on this proposal even though we do not foresee it becoming effective.

In our opinion it is not in the best interests of the province to concentrate all its graduate work in Geography at two universities - Toronto and McMaster - in this eventuality. While we recognize the strength of these two departments and we share the consultants high regard for their accomplishments, we believe that the other departments which by and large are young, vigorous and growing must be maintained in a viable state if the future of Geography in the province is to be healthy. We believe that the programmes at Toronto and McMaster could be sustained at a somewhat reduced enrolment without significantly reducing their effectiveness or their contribution to the field. The younger departments could then be allowed enrolments that would maintain their programmes and permit them to grow and develop. We believe that this is most important from the long term point of view for the province which must be looking to the development of new younger faculty in this field.

Conclusion:

In summary then, the University of Waterloo is in agreement with all of the major recommendations contained in this report as listed on pages 40 and 41 thereof. Our disagreement with and comments on some of the details in the report have been presented above. We respectfully request A.C.A.P. to take these comments into consideration in drafting its report to C.O.U.

Respectfully submitted,

L.A.K. Watt

L.A.K. Watt

WATERLOO LUTHERAN UNIVERSITY

Waterloo, Ontario, Canada Telephone (519) 744-8141

Graduate Studies and University Research

The Director

March 7, 1973.

Dr. M. A. Preston,
Executive Vice-Chairman,
Advisory Committee on Academic Planning,
Ontario Council on Graduate Studies,
Council of Ontario Universities,
102 Bloor Street West,
Toronto 181, Ontario.

Dear Mel,

Waterloo Lutheran University is in receipt of the Discipline Assessment Report on Geography and after careful study and discussion wishes to make a written comment.

One wishes that the assessors had been able to spend more time on the campus. While the assessors no doubt had prepared for their visit, it is difficult to imagine how questions of such far reaching consequence could be fully discussed in the course of an afternoon.

This University has no basic quarrel with the high standard of research demanded by the assessors, in fact, Waterloo Lutheran University has attempted to foster and encourage both individual and team research. It is by no means clear, however, that the alternatives have been fully probed whereby a smaller institution can make a valid contribution to the total graduate picture in this province. Specifically, where is the diversity permitted and encouraged whereby part-time students, teachers seeking upgrading, those working on terminal masters degrees and so forth are to be accommodated? If recent trends continue, these are the groups which will increase more dramatically in numbers and importance than heretofore anticipated. In fact, if one is to pay attention to the overall aims of the Report of the Commission on Post-Secondary Education in Ontario, the sweeping demands to be met in these areas in the next decades are of such magnitude that the dimensions have hardly been conceived let alone understood.

...

Dr. M. A. Preston,

March 7, 1973.

It is to the direction of meeting the needs of the part-time and terminal graduate student that Waterloo Lutheran University has moved and is moving with deliberate planning. The gifted student can and will ultimately go on to a Ph.D. in spite of any system. Those students and indeed, staff members whose sole orientation is toward a basic research degree will quite appropriately select a setting where such pursuits are encouraged both in terms of facilities and other support. Surely the conclusion that only a basic research orientation is valid for magisterial work is unfounded today and rather anachronistic. To argue that a terminal degree approach is less demanding and hence less worthwhile is hardly in keeping with current educational theory.

Waterloo Lutheran University is confident that ACAP will make ample provision for extensive diversity not only in specialty areas but in total orientation and approach when evaluating the field of Geography in Ontario. After achieving recognition for an honours program of some standing in this area, it is our aim to continue the emphasis at the Masters level. In this area we hope to have something to contribute as well as to learn in the future.

Sincerely,

Norman E. Wagner,
Director,
Graduate Studies & Research.

NEW/mp

Response of the University of Western Ontario to the Report of the Consultants in Geography of the Advisory Committee on Academic Planning.

March 23, 1973

The University of Western Ontario response to the Consultants' report to ACAP on the discipline of Geography as outlined below, is the result of the deliberations of a special Senate Committee established for this particular purpose.

The Committee feels that, from the overall point of view, the Consultants' report suffers from the rather arbitrary way in which the discipline has been divided into areas that seem not to preserve the distinctive core of content and methodology that allows for recognition of a definite discipline in Geography. This difficulty seems to have been recognized by the Consultants' themselves. A significant part of what we feel to be vital and germane to the discipline of Geography is dealt with in another Discipline Report.

Secondly, the Committee does not accept, as a viable alternative, the proposal (p. 38) that all doctoral work should be vested in only two institutions. Aside from placing a heavy burden on these institutions the proposal effectively prevents normal and healthy development in other departments and deprives the Province of the strength derived from diversity.

In addition to these general observations, we would like to comment more specifically on the following points contained in the Consultants' report.

I Quotas

The committee wishes to express some uneasiness about the appearance of quotas for each University. Two comments may be made. First, the overall numbers, however tentatively suggested by the consultants, are based on studies of need that seem to rest on changing criteria and are of questionable reliability. Secondly, and more to the point, the figures suggested for Western (10 Ph.D. - 50 M.A.) may reflect, with reasonable accuracy, the present potential of the Department, but, if taken as a binding committment for planning, would seriously hamper the ordinary course of development of the Department. Like any other, Geography is a dynamic discipline and

the future profile of the Department will, and should, reflect the shifts in emphasis and growth within the fields that comprise the discipline. Faculty interaction, the findings of research and the development of the potential of the present staff could result in a situation in which a truly competent and viable department would be seriously restricted in its intellectual goals and growth if these quotas were to be taken as inflexible guidelines.

Therefore, the Committee wishes to call this problem to the attention of ACAP and to suggest that some mechanism be developed whereby ACAP may periodically review and revise these suggested quotas if they are to be used as a basis for planning.

II Over-Extension of the Faculty

In a related matter, we wish to comment on the Consultants' observation that the present department should evolve a more discriminating process for selection of those members of faculty who are to be directly involved in graduate work. The Committee is in basic agreement with the Consultants on this point. Already the Department, under its new Chairman, is seeking to develop a required core program for all doctoral students and is exploring the means of assigning appropriate staff to this program. Also, the Faculty of Graduate Studies has been examining, for some time, the general problem of evolving a set of criteria which would allow it to secure a Faculty whose scholarly competence to guide advanced graduate work is assured.

III Identified Areas of Specialization for the University of Western Ontario.

The Committee does not wish to alter the present areas of competence assigned to the University of Western Ontario by the Consultants. We must, however, reiterate our concern expressed (in I) above. The dynamics of a changing department, especially in developing the potential of its younger members, requires the flexibility to move into areas of newly acquired strength and competence that results from the scholarly dialogue and development

that must be the mark of any competent group of scholars. We would, therefore, suggest that, while the areas of competence suggested by the Consultants may be taken as a not unreasonable evaluation of the Department's present profile, ACAP should direct its attention to some means whereby a review and revision of these areas could be undertaken periodically. To be locked into areas of specialization that quite soon may be restrictive on the Department's scholarly development, would have a deleterious effect on scholarship both in the Department here at Western and upon its contribution to the discipline both nationally and internationally.

IV Inter-University Cooperation

Tentative beginnings of interdepartmental co-operation of the sort suggested by the Consultants have already been initiated.

The University of Western Ontario, London, Canada

Faculty of Graduate Studies
Office of the Dean

December 7, 1973

Professor M.A. Preston,
Executive Vice-Chairman,
Advisory Committee on Academic Planning,
Ontario Council on Graduate Studies,
Council of Ontario Universities,
102 Bloor Street West,
Toronto, Ontario.
M5S 1M8

Dear Professor Preston:

With respect to the statement to be attached to Appendix (C) of the A.C.A.P. report on Geography about which you called me on December 3rd. I attach a copy of a letter sent to Mr. Grant Clarke on October 26, 1973 by Dr. T.J. Collins (Academic Colleague for this University) which describes the matter which has caused concern at Western.

The only addition I can make to this information is that the present enrolment (December 1, 1973) is 13 full-time and 11 part-time doctoral students which is to be compared with the data in 1971 of 21 full-time and 13 part-time students. It is our expectation that this population will be further reduced.

We would contend, therefore, that the period of study to secure a Ph.D. in Geography at this University is very comparable to that prevailing at other Ontario Universities and that the allegation of overextension in the Consultants' and A.C.A.P. reports is not justified.

I hope this meets your needs.

Yours sincerely,

H.B. Stewart,
Dean,
Faculty of Graduate Studies.

HBS/mmd
encl.
c.c.: Dr. D.C. Williams,
Dr.R.J. Rossiter,
Dean G.L. Reuber,
Dr. T.J. Collins,
Dr. W. Warntz.

October 26, 1973.

Mr. G. Grant Clarke,
Secretariat of the Council of the Universities of Ontario,
102 Bloor St. West,
Toronto, Ontario.
M5S 1M8

Dear Grant:

At the 95th meeting of COU I read a document relating to the ACAP geography report which, I understand, COU agreed to append to its report. It still seems to me that it would be much more satisfactory and less obtrusive simply to make brief mention of these facts in the COU report. Whatever the case, it occurred to me that you might not have recorded the facts as I presented them because of my somewhat rapid-fire delivery, so I thought that I had better send you the following.

1) The sequence of events in the geography department ACAP problem is as follows:

   a) In the autumn of 1970 the Chairman informed Dean Reuber of his intention to resign the chairmanship on June 30, 1971.

   b) The Faculty of Social Science and the internal appraisals committee arranged an assessment, and Professor J. Chapman (U.B.C.) and Professor R. I. Ruggles (Queen's) visited the department during February of 1971 and identified with clarity the difficulties evident in the department.

   c) About July 1st, 1971, Professor Wm. Warntz was appointed chairman. He became the discipline representative on the ACAP discipline group.

   d) Prior to the visit of the ACAP consultants (i.e. on November 3, 1972) the department of geography informed the consultants of the improved graduation rate - a phenomenon which has persisted to the present. To quote Professor Warntz in a letter to me July 17, 1973,

"The department has granted, in its history to date, eight Ph.D.'s. Two were granted in 1970 and six in 1972-73. Four of these latter six had been accomplished after the ACAP reporting date but prior to the consultants' visit. The consultants were apprised of this situation and of the two likely completions during the balance of this past academic year following their visit."

e) The consultants visited Western November 23, 1972, and again had the altered condition of graduation drawn to their attention.

2) In spite of this effort the statement about overextension appeared in their report. On March 23rd the Senate Committee pointed out that steps had been taken to remedy the situation which were already bearing fruit. Since the ACAP report insisted in perpetuating this statement in its report to COU we again protested by letter to the Executive Secretary of ACAP on May 24, 1973.

Since ACAP has not agreed to alter their report in light of the above stated facts U.W.O. believes that it should be made clear that ACAP has in no way had anything to do with the improvements that have occurred in our geography department. These changes have stemmed from activities initiated within this University before any visit of the ACAP consultants had taken place.

I hope, Grant, that this information will be of assistance to you.

Sincerely,

T. J. Collins
Academic Colleague

TJC:kb
cc: D. C. Williams
H. B. Stewart
W. Warntz

The University of Windsor Response to Geography A.C.A.P. Consultants Report

The University of Windsor Department of Geography was the first Department visited by the consultants and they arrived in Mid-Summer, 1972, just two weeks after Dr. Innes joined the Department as Chairman. Although Dr. Innes has been with us for less than a year, he has given great strength and strong leadership to the Department. In the A.C.A.P. report the Department was broadly endorsed to offer Masters programmes and received specific encouragement to do so in the fields Urban/Economic, Climatology and Cultural/Historical Geography although these programmes at the M.A. level had only been launched some three years ealier. This speaks much for the ground work that has been done, and indicates that the priorities given by the University to building up this discipline had been deserved.

In particular, it is noted that modest expansion of the Masters Programme at this University is recommended. The University endorses this recommendation and its implications for improved space and facilities whilst expecting stable faculty numbers unless enrolments substantially increase. Geography is already benefiting from a newly announced University of Windsor programme of graduate student support which is enabling the Department to ensure quality control in admitting students to the Masters level.

It is noted that graduates have found local employment as teachers and planners and that the University offers a good terminal Master's degree either of a generalized or an applied nature. We interpret this to mean, as the term "terminal Masters degree" is not used elsewhere in the report, that our product at this level is exceptionally well trained for employment in a world where generalists and applied scientists are increasingly in demand, and adequate resources will be available to maintain this lead. Indeed the department has stated that the M.A. level will remain its priority for at least the next five years and as no other institution in the Ontario system has made this undertaking, it is suggested that some redeployment of the numbers in table IV (as suggested totals) might be made to acknowledge this. In few Ph.D. granting departments is the M.A. student given prime attention and in view of the criticism in the report of the slowness of completion of Ph.D.'s together with the apparent need to reorganise that level of study, it would appear that Windsor by absorbing some of the M.A. enrolment perhaps especially from Western and York might enable those centres to better develop their more advanced work.

It is noted that preparatory work for the Ph.D. programme in Climatology and historical geography in addition to applied Urban-Economic geography is sound. Links with the other Climatologists in the Province are well developed as also with the University of Michigan. In Urban-Economic Geography such links are strong with

Wayne State University, and the Historical Geographers value their closeness to the Clements Library at Michigan. Thus, whilst agreeing to working out details of closer co-operation with our nearest Canadian sister institution, Western Ontario, we are somewhat surprised to note the consultants' lack of recognition of Windsor as part of the Detroit Metropolitan region with all of its resources, and opportunities. e.g. Windsor University students have full access to Wayne States Library resources, and frequently undertake Urban field work in Detroit.

We regret the lack of recognition of Regional Geography and of regional application of geographic professional activity. Windsor University is a member of the Ontario Co-operative Programme for Latin American and Caribbean studies and in this connection has had close links with the University of Guyana, as well as having an interdisciplinary strength in the Social Sciences and a Department of Hispanic studies that offers language training in both Spanish and Portuguese. Moreover, there is a Department of East Asian Studies which adds strength to the Geographic offerings on this part of the world, and expertise in Soviet and Eastern European studies is also of an interdisciplinary nature on this campus. We, therefore, regret that more uniform treatment of these regional commitments was not made, instead of what we can only regard, as an arbitrary mention of strength in areas of overseas expertise at other institutions in the system.

In brief, the University of Windsor accepts the consultants' report and recommendations with the implication that the situation be reviewed in five years. In the meantime, it undertakes to develop graduate training in geography in the designated areas, seeking to achieve a quality Masters programme for some 20-25 students per annum adequately provided with the resources necessary for this purpose, and to investigate further development of innovative non-categorised interdisciplinary programmes with geographic input in the areas of Development Studies, Business Geography, Great Lakes Environmental assessment and Medical Geography.

A.C.A.P. has our approval to file this statement as one of the appendices to the A.C.A.P. report to C.O.U.

C.P. Crowley, Ph.D.,
Dean of Graduate Studies

YORK UNIVERSITY
4700 KEELE STREET,
DOWNSVIEW, ONTARIO, CANADA

FACULTY OF GRADUATE STUDIES
OFFICE OF THE DEAN

26 March 1973.

Professor M.A. Preston,
Executive Vice-Chairman,
ACAP, Council of Ontario
Universities,
102 Bloor Street West,
Toronto 181, Ontario.

Dear Mel,

On behalf of York University, I now send you the University's response to the final report of the ACAP consultants in Geography. It seems to us that the consultants have served the Province well and that the report is a useful one. We thus do not wish the remarks which follow to be read as detracting in any way from the overall high quality of the report as a whole.

[1] As one of the two recently appraised programmes, we naturally trust that COU will accept the recommendation of the consultants and in turn recommend that the doctoral programme at York be released from the funding embargo.

[2] It is noted that, though the allocation of doctoral places is specific, the consultants also state on page 14 that these numbers "are to be considered as general guides in planning" and that "modest variations from the suggested figures are to be expected." Since the 10 places recommended for York corresponds to the University's original plans, we have no quarrel with the main recommendation. At the same time, the flexibility recommended by the consultants seems highly desirable.

[3] York does not wish to comment at this juncture on the number of doctoral places recommended for other Universities, since the total proposed population of doctoral candidates in the Province as a whole seems right. On the other hand, if ACAP did not accept the consultants' opinions and advice, the University would feel that the allocation of doctoral places that is proposed in the present report would need very wide discussion, since to favour programmes that have not been appraised over those that have would raise a number of difficult questions that have not yet been squarely faced.

[4] York's most serious reservation about the consultants' report concerns the relatively low opinion the consultants formed of the urban/economic group. We feel that faculty in the urban/economic sub-field are collectively as strong as those in the more highly rated cultural/historical sub-field and, further, that this strength within Geography is consistent with the University's larger and well-known interests in urban and economic questions, as manifested by social science faculty in the Faculties of Arts, Administrative Studies and Environmental Studies.

Yours sincerely,

Michael Collie,
Dean, Faculty of Graduate

A P P E N D I X D

PROCEDURE OF PLANNING STUDY AND TERMS OF REFERENCE

Procedure for Geography Planning Assessment

21 January, 1972

The planning assessment will cover the following divisions of geography: Biogeography, Cartography, Climatology, Cultural-Historical, Hydrology, Regional, Resource Analysis, Urban-Economic.

A. Tasks Requested from Discipline Group (with help available from ACAP at all stages)

A.1. Suggest suitable consultants. This also will be a matter for discussion with ACAP. (List submitted, January , 1972.)

A.2. Examine and comment on pro formae to be used for the gathering of information on current, past and future programmes as described in paragraph B.1.

A.3. Examine and comment on the adequacy of the data on current and past strength.

A.4. Both in consultation with ACAP and separately, consider the situation revealed by the tabulation of proposed future programmes and consider whether future plans should be modified or developed in more detail. As a result of this step, individual universities may wish to revise the material described in B.1.d below.

A.5. Possibly develop a tentative plan for development of established or new graduate work in these aspects of geography in Ontario, based on the evaluation of prospects and plans for the departments collaborative arrangements and paying attention to adequate coverage of the divisions of the discipline. Any such plans will be reported to ACAP which will transmit them to the consultants.

B. Information from Universities

B.1. Each university is asked to supply to ACAP, in the form indicated by ACAP after comment by the discipline group (paragraph A.3) information as follows:

a) for each division viz. biogeography, cartography, climatology, cultural-historical, hydrology, regional, resource analysis, urban-economic:

(i) current list of faculty members (for part-time members show the time spent on university duties);

(ii) numbers of full-time and part-time faculty members for each of the past five years;

(iii) for the current year and preceding five years, number of graduate students taking graduate courses in the division and number of (1) master's and (2) Ph.D. candidates doing dissertation in the division; full and part-time shown separately.

Under these three headings one individual may appear under more than one category.

b) for each "department"

(i) Curricula Vitarum of all faculty members (Assistant Professor and higher) now engaged in graduate work or soon expected to be and showing inter alia complete publication lists, research and consulting funding in the past five years when relevant to his academic work and students supervised during his career. (Major supervisor: completed and in progress shown separately.)

(ii) resources of space - a statement indicating the department's view of the adequacy of its space, and, in connection with the future plans in (d) below, discussing future space provision;

(iii) undergraduate base; honours students, number of qualifying or make-up year students, etc;

(iv) other general items relevant to research and graduate study, e.g. computing facilities;

(v) support from related departments including shared teaching and research in the divisions covered by this assessment;

(vi) extent of major laboratory facilities and equipment in the divisions covered by this assessment;

(vii) library resources: analysis of holdings and budget;

(viii) description of any inter-university arrangements for graduate work.

c) table of characteristics of graduate students in the department (excluding those in solid earth sciences)

(i) F.T. and P.T.;

(ii) immigration status (3 years) and country of first degree;

(iii) sources of financial support;

(iv) time to reach degree;

(v) drop-out number;

(vi) Ph.D. ABDs;

(vii) degrees granted;

(viii) post graduate employment of Ph.D.'s (a) immediate and (b) after two years;

(ix) ABD current employment.

d) proposed plans for the future, in as much detail as the department can provide, including the proposed scheme for support of these plans, and accompanied by supporting arguments, including consideration of the sources of graduate students and an analysis of demand for graduates from the programmes. The various headings in a) and b) above should be dealt with quantitatively where possible; as a minimum, planned numbers of faculty and graduate students should be given.

B.2. The material so supplied will be collated by ACAP and transmitted to the discipline group for action indicated in paragraphs A.3., A.4 and A.5.

B.3. Apart from the material described in B.1.d and to some extent generated at the department level, each interested university will be requested to make an individual statement on its plans for the development of geography, in particular the items of future commitment implied by item B.1.d. Deadline dates for parts A and B will be established by ACAP.

C. Terms of Reference of Consultants

C.1. Consider the materials prepared by the discipline group and the universities and obtain other data they may require to carry out the tasks detailed below. They may obtain data and views from any relevant source, such as, for example, employers of holders of graduate degrees, professional and learned societies, federal agencies. They shall consult, at appropriate times, with the consultants working on the Planning and Environmental Studies Assessment in order to compare findings where urban and regional geography studies impinge closely on planning courses. They should discuss their findings with the consultants working on the Solid Earth Sciences Assessment. The campus of each interested university shall be visited by at least two consultants. Consultants shall arrange their schedule of visits to the universities in consultation with ACAP to ensure uniformity. Reports of appraisal consultants are privileged documents and are not to be made available to ACAP consultants. Consultants shall liaise with the discipline group near the beginning of the work, during the work as they consider necessary, and immediately before preparing their final report.

C.2. Report on the adequacy of the present state of graduate work in geography in the province in general and in each university where applicable, discussing the following:

a. coverage of divisions and specialties, and extent of activity in each.

b. faculty quality and quantity

c. nature of programmes offered

d. enrolment size and distribution amongst universities

e. quality of student body; admission requirements

f. relationship to related disciplines

g. physical facilities

h. other matters considered by the consultants to be significant.

C.3. Make recommendations for the development of graduate work in geography in Ontario between 1973 and 1983, but in more detail for 1973 through 1978, and, without limiting the generality of the foregoing, dealing with the following points:

a. Desirable programmes to be offered in the province, considering both possible limitations or reductions of existing programmes and creation of new programmes and new kinds of programmes including the appropriateness of part-time programmes. In particular, consider any new areas of geography in which graduate work should be developed and any application-oriented and inter-disciplinary work in which geography should be involved.

b. Desirable provincial enrolments, year by year, in the various levels of graduate study and the various subject divisions. One should consider the need for highly trained manpower and also the general cultural and societal factors which may lead students to pursue graduate work in geography. In considering manpower needs, one should take account of the "market" available to graduates (at least all of Canada) and of other sources of supply <u>for that market</u>. Results of forecasts of high level manpower employment should be treated with due caution and only in a clearly balanced relationship with cultural and societal needs.

c. Distribution amongst the universities of responsibility for programmes and for specialties where appropriate, including consideration of the need for any increase or decrease in the number of departments offering doctoral work and including consideration of areas of collaboration and sharing of facilities at regional level and across the province.

d. Distribution of enrolment amongst the universities, showing desirable <u>ranges</u> of enrolment.

e. Desirable extent of involvement with related disciplines.

In all cases, it is important that the rationale for the recommendations be clear; this is especially important for items c. and d. Consultants are asked to comment on advantages and disadvantages of various techniques for arranging that their recommendations become effective.

C.4. It is permissible for consultants to recommend appraisals of individual programmes. This would arise if consultants were to suspect that a programme would be found to be wholly or in part below minimum acceptable standards; an appraisal by the Appraisals Committee is the means of settling the question. It is recognized that this action would be infrequent. Perhaps more likely, in planning assessments in some disciplines, consultants may find an excess of programmes in the same area of study, all of which could pass an appraisal; they would then have to make their own judgments of relative quality (a task outside the terms of reference of the Appraisals Committee), and guided by this judgment and other factors, the ACAP consultants would have to recommend where enrolment should be curtailed or eliminated.

D. Appointment of Consultants

The consultants shall include one person of wide academic experience in Canada but in a different discipline. The other two consultants shall be geographers of international standing with suitable administrative or consulting experience.

E. Report of Consultants

The consultants submit a joint report to ACAP. Minority reports are of course, possible. The reasoning leading to their recommendations should be given fully, in view of the subsequent treatment of the report. The report is submitted for comment to the discipline group and to each interested university. There may be informal or interim exchanges of views amongst the discipline group, the universities, and ACAP. Any university which wishes to make a formal statement on the consultants' report shall submit it to ACAP. Any such report shall be transmitted to the discipline group. The discipline group shall submit its formal comments and/or recommendations to ACAP. ACAP considers the discipline group and university statements along with the consultants' report and trasmits them to COU with its recommendations of the position COU should adopt. Copies of the material transmitted to COU will be supplied to OCGS, to the Council of Deans of Arts and Science, and to the members of the discipline group and to the interested universities. The consultants' report may be published together with the comments of the discipline group, those of any university so requesting, and with the position adopted by COU.

A P P E N D I X E

DISCIPLINE GROUP MEMBERSHIP

APPENDIX E

DISCIPLINE GROUP MEMBERSHIP

BROCK -	Dr. J. B. McClellan
CARLETON -	Mr. D. M. Anderson until May 1, 1972 Dr. J. P. Johnson, Jr.
GUELPH -	Dr. F. A. Dahms
LAKEHEAD -	Dr. B. Phillips until April 26, 1973 Dr. D. Kemp
LAURENTIAN -	Dr. J. Konarek until March 1, 1972 Dr. A. A. Lupton
McMASTER -	*Professor L. J. King
OTTAWA -	Dr. R. J. Wesche until June 22, 1973 Professor H. Morrisette
QUEEN'S -	Professor R.H.T. Smith until August 1, 1972 Professor R. I. Ruggles
TORONTO -	Professor D. P. Kerr until February 14, 1973 Professor J. Spelt
TRENT -	Professor P. Adams
WATERLOO -	Dr. R. M. Irving until July 1, 1972 Dr. L. Russwurm
WATERLOO LUTHERAN -	Professor J. McMurry
WESTERN ONTARIO -	Professor W. Warntz
WINDSOR -	Professor J. C. Ransome until February 7, 1972 Dr. M. Sanderson until July 1, 1972 Professor F. C. Innes
YORK -	Dr. J. U. Marshall

* chairman of discipline group

A P P E N D I X F

ROLES OF ACAP AND OF DISCIPLINE GROUPS

Ontario Council on Graduate Studies

By-Law No. 3

A By-Law to establish a Committee on the Academic Planning of Graduate Studies.

1. The Ontario Council on Graduate Studies, recognizing the importance of providing for the continued and orderly development of graduate studies in the Ontario universities, establishes a Standing Committee to be known as the Advisory Committee on Academic Planning (abbreviation - ACAP).

Interpretation

2. In this By-Law,

   (a) "Committee" without further specification, means the Advisory Committee on Academic Planning;

   (b) "Council" or OCGS means the Ontario Council on Graduate Studies;

   (c) "Committee of Presidents" or CPUO means the Committee of Presidents of Universities of Ontario;

   (d) "university" means a provincially assisted university in Ontario;

   (e) "discipline" means any branch or combination of branches of learning so designated;

   (f) "discipline group" means a body designated as such by the Committee of Presidents of the Universities of Ontario, and normally consisting, for any one discipline, of one representative from each of the interested universities;

   (g) "planning assessment" means a formal review of current and projected graduate programmes within a discipline or a group of disciplines;

   (h) "programme" signifies all aspects of a particular graduate undertaking;

   (i) "rationalization" means the arranging of graduate programmes in order to avoid undesirable duplication, eliminate waste, and enhance and sustain quality.

Membership

3. (a) The Committee shall consist of at least seven members of the professoriate in Ontario universities, some of whom shall be members of the Council.

(b) The members of the Committee shall serve for such periods of time as the Council may determine, and they shall be selected in such manner as may provide for reasonable balance both of academic disciplines and of universities.

(c) The members of the Committee shall be appointed as individuals.

Chairman

4. The Chairman of the Committee shall be named by the Council, and he shall have one vote.

Quorum

5. A majority of all members of the Committee shall constitute a quorum.

Functions

6. The functions of the committee shall be

(a) To advise OCGS on steps to be taken to implement effective provincial planning of graduate development;

(b) To promote the rationalization of graduate studies within the universities, in cooperation with the discipline groups;

(c) To recommend, through OCGS, to CPUO the carrying out of planning assessments of disciplines or groups of disciplines and to recommend suitable arrangements and procedures for each assessment;

(d) To supervise the conduct of each planning assessment approved by CPUO;

(e) To respond to requests by CPUO to have a discipline assessment conducted by proposing suitable arrangements;

(f) To submit to CPUO the reports of the assessments together with any recommendations which the committee wishes to make. A copy of the report shall be sent to Council.

Jurisdiction

7. In order that the Committee may discharge the functions described in Section 6 above, it shall be authorized

(a) to request a university to provide such information pertaining to graduate studies as may enable the Committee to discharge its functions;

(b) to request a discipline group to provide such information as may enable the Committee to discharge its functions;

(c) to receive reports from the universities and from the discipline groups, and to comment and communicate with the universities and the discipline groups concerning such reports;

(d) to convene a meeting of any discipline group for the purpose of discussing the development to date, and proposals for the future development of graduate studies in the discipline concerned;

(e) to send one or more representatives to a meeting of a discipline group at the invitation of the discipline group;

(f) to make such suggestions to a discipline group as may be deemed appropriate to the functions of the Committee;

(g) to supervise the conduct of planning assessments, and to report thereon to the Committee of Presidents of Universities of Ontario;

(h) generally to report and to make recommendations to the Council;

(i) to seek and receive advice from appropriate experts;

(j) to employ consultants in connection with planning assessments.

Procedures

8. The procedure to be followed by the Committee shall be as approved by the Committee of Presidents of the Universities of Ontario.

9. The Committee's function is solely advisory.

Effective Date

10. This By-Law shall take effect January 1971.

ACAP DISCIPLINE GROUPS AND THEIR ROLES

1. Establishment of a Group

a. When it is considered desirable to activate planning of graduate work in some discipline(s) or interdisciplinary area, COU, on the advice of OCGS, will authorize the establishment of an ACAP discipline group, if it was not already approved and included in the May, 1968 list. If it is already authorized, ACAP may decide to set it up as described in paragraph b.

b. The Executive Vice-Chairman of ACAP will then invite the executive head of each university (including Wilfrid Laurier University) either to nominate a member of the discipline group or to indicate that his university has no plans for graduate study in this discipline in the next five years or so. If a university can state no plans for future graduate work in the subject, but feels that a watching brief is desirable, it may appoint an observer to the group.

c. Changes of a university's representative are to be notified by the executive head.

d. The group shall select its own chairman.

2. Meetings

a. A discipline group may meet at the call of its chairman or in accord with its own arrangements.

b. A discipline group may be called to meet by the Executive Vice-Chairman acting for ACAP.

3. Responsibilities

a. The group is to keep under review the plans for the graduate work in its discipline in Ontario, including new developments and trends in the discipline, and to make reports to ACAP on a regular basis.

b. The group may make recommendations to ACAP in connection with graduate work in its discipline when it considers it appropriate.

c. ACAP will assist the group in obtaining information and data, as mutually agreed.

d. When COU has instructed ACAP to conduct a planning assessment, the discipline group will assist and advise ACAP in determining procedures and terms of reference, will report as requested and will generally facilitate the assessment.

Approved by OCGS March 22, 1973
and by COU April 6, 1973

APPENDIX G

ACAP ESTIMATES OF ACADEMIC EMPLOYMENT

APPENDIX G

Estimates of the University Demand for Ph.D.'s in Geography (excluding geomorphology and pedology)

Throughout this document the word "Geography" is used to mean only those fields of geography covered by this planning assessment, i.e. geomorphology and pedology are excluded.

Number of present F.T. staff in "Geography" (including cross-appointments but excluding visiting professors) for all Ontario universities = 228 (from data submitted to this assessment.)

Number of these with Ph.D.'s = 180 i.e. 79% of the total F.T. staff.

We shall assume that the attrition rate due to deaths and retirements = 1.2% p.a. and the net resignation rate = 2.0% p.a.

(a) Assuming no net expansion in Geography and no change in the student staff ratio.

Applying 3.2% to the F.T. staff, we arrive at a need for about 7 new staff members per year and assuming that about 90% of these will hold Ph.D.'s (present % = 79%) then approximately 6 new Ph.D.'s per year in Geography are required.

(b) Assuming average enrolment growth rates of 5% p.a. and 10% p.a. in Geography and no change in the student/staff ratio, the demand for new staff (excluding replacements) is as follows:

Year	Total Staff Growth Rate		Net increase due to growth	
	5%	10%	5%	10%
1971-72	228	228	-	-
1972-73	239	251	11	23
1973-74	251	276	12	25
1974-75	264	303	13	27
1975-76	277	334	13	31

The demand for replacement and total staff is as follows (3.2% attrition).

Year	Replacement staff		Total new staff	
	5%	10%	5%	10%
1971-72	7	7	-	-
1972-73	8	8	19	31
1973-74	8	9	21	34
1974-75	8	10	23	37
1975-76	9	11	24	42

Therefore the average number of new staff required over the four year period (1971-72 to 1975-76) is 22 p.a. @ 5% growth rate
or 36 p.a. @ 10% growth rate

Assuming that 85% of new staff will possess a PhD the new staff with PhD's required is 19 p.a. @ 5% growth rate
31 p.a. @ 10% growth rate

For all Canada the numbers of PhD's required in Geography are as follows (assuming that 32% of the Geography faculty are to be found in Ontario).

59 p.a. @ 5% growth rate
97 p.a. @ 10% growth rate

Our best estimate of the demand for PhD's in university teaching in Geography are for Ontario 19 p.a. @ 5% growth rate
and for Canada 59 p.a. @ 5% growth rate

It should be noted that the 18-22 age group in Ontario is expected to grow at a 4.4% p.a. rate between 1971 and 1976 (Source: The Draft Report of the Commission on Post-Secondary Education). From 1976-1981, it will grow at a slower rate of 2.0% p.a.

T. DaSilva
Research Assistant

September 14, 1972

A P P E N D I X H

CURRICULA VITARUM OF THE CONSULTANTS

ANDREW HILL CLARK

born Fairford, Manitoba, April 29, 1911

B.A. McMaster, 1930
University of Manitoba 1931-32
M.A. Toronto, 1938
Ph.D. California (Berkeley) 1944 (fellowship, 1938-40)

Actuarial Assistant, Manufacturer's Life Insurance Company, Canada 1932-35
Assistant and Instructor, Geography, Toronto 1935-38
Lecturer, California, 1938-40
Visiting Lecturer, Canterbury College 1940-42

Instructor, U.S. Army Air Force, 1942
Army specialized training program, Hopkins, 1943-44
Research Analyst, O.S.S. in U.S. and China, 1944-45
U.S. Dept. of State, 1945-46

Associate Professor of Geography, Rutgers University, 1946-49
Professor and Chairman, 1949-51
Professor, University of Wisconsin, 1951-66
Lecturer, University of London, May 1954
Chairman of Department, 1958-61
Guggenheim Fellowship, Fulbright Research Scholar and Social Science Research Council Faculty Research Scholar, 1961-62
Vernor Clifford Finch Research Professor, 1966-
McDonald Lecturer, McGill 1966
Erskine Fellowship, Canterbury, 1967
Citation of Acadia by Beveridge Award Committee, American Historical Association, as best historical work on Canada for 1968
B.P. Fellow in American Studies and Visiting Professor at the University of Dundee, 1971-72

Societies:

Association American Geographers (ed. Monograph series, 1957-61, honorary president, 1961-62)
Geography Society, Canadian Geography Society

Historical geography of Canada, United States, Australia, New Zealand, and South Africa, especially geographic aspects; evolution of rural settlement and agricultural and pastoral patterns in lands settled overseas from shores of North Sea.

Principal Publications:

The Invasion of New Zealand by People, Plants and Animals
Three Centuries and the Island
The Roots of Canada's Geography (co-author) In Canada: A Geographical Interpretation

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ARTHUR GILBERT MCCALLA

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B.Sc. University of Alberta, 1929
M.Sc. University of Alberta, 1931
Ph.D. University of California, 1933

Assistant Professor and Research Assistant, University of Alberta, 1929-31
Professor, Field Crops, 1941-44; Plant Science, 1944-71
Chairman of Department, 1944-51
Dean, Faculty of Agriculture, 1951-59
Dean, Faculty of Graduate Studies, 1957-71
Emeritus Professor, Plant Science, 1971-

Associate Committee on Grain Research, 1932-41
Researcher, Institute Physical Chemistry, Uppsala, Sweden, 1939-40
Member, National Research Council, Canada, 1950-56
Chairman, Prairie Regional Committee, NRC, 1952-57
Chairman, Associate Committee on Grain Research, NRC, 1951-61
President, Canadian Association of Graduate Schools, 1962-63
Member, Canadian Commonwealth Scholarship and Fellowship Committee

Societies:

Fellow of the Royal Society of Canada
Canadian Biochemistry Society
Fellow of the Agricultural Institute of Canada
Alberta Institute of Agrologists
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American Association for Advancement of Science
Canadian Bio-chemical Society

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EDWARD JAMES TAAFFE

born Chicago, Illinois, December 11, 1921

B.S. New York University, 1944
B.S. Illinois, 1944
M.S. Chicago, 1949
Ph.D. Chicago, 1952

Assistant Professor, Loyola (Illinois) 1951-58
Associate Professor, Northwestern University, 1958-63
Professor and Chairman of Department, Ohio State University, 1963-

Committee on Geography, Earth Science Division, National Academy of Science, 1967-
Chairman, Geography Panel, Behavioral and Social Science Survey Committee, Behavioral Science Division, National Academy of Science, 1967-69
Advisory Board, Economic Geography, 1970-
U.S.A.A.F., 1943-46

Societies:

Association of American Geographers, (Vice-President, 1970-71, President, 1971-72)
Regional Science Association
American Geography Society

Principal Publications:

Air Passenger Hinterland of Chicago
The Peripheral Journey to Work: A Geographic Consideration
Air Transportation and U.S. Urban Distribution

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